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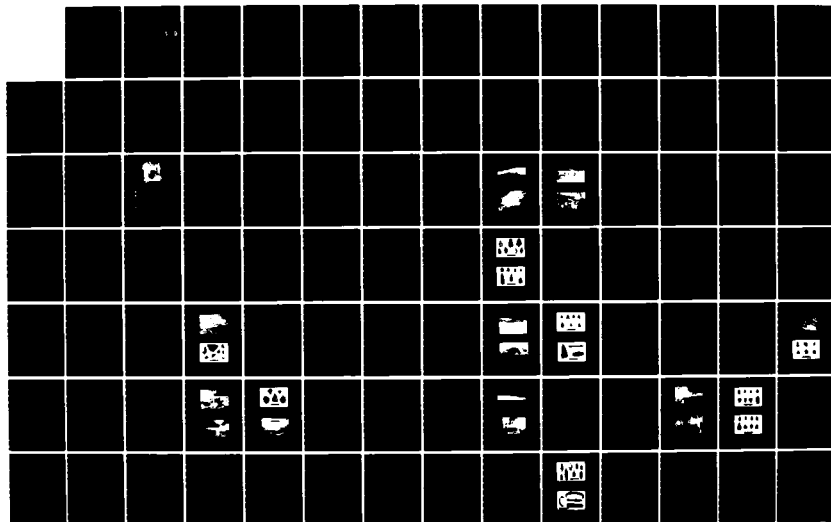
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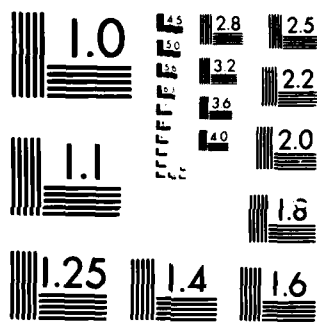
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**Cultural Resources Inventory
of Lands
Adjacent to Lake Winnibigoshish**

AD-A163 697

Submitted to

U. S. Army Corps of Engineers
St. Paul District

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FEB 07 1986
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by

Elden Johnson, Principle Investigator
Christina Harrison, Field Director
Jeanne Schaaf, Laboratory Analyst

June 1977

Contract Number: DACW 37-76-C-0181

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1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) CULTURAL RESOURCES INVENTORY OF LANDS ADJACENT TO LAKE WINNIBIGOSHISH		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Elden Johnson Christinia Harrison Jeanne Schaaf		8. CONTRACT OR GRANT NUMBER(s) DACW37-76-C-0181
9. PERFORMING ORGANIZATION NAME AND ADDRESS Archaeology Laboratory 210 Ford Hall University of Minnesota, Mpls., MN 55455		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Corps of Engineers, St. Paul District 1135 USPO & Custom House St. Paul, MN 55101-1479		12. REPORT DATE June 1977
		13. NUMBER OF PAGES 147 p.
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) ARCHAEOLOGY LAKE WINNIBIGOSHISH		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Twenty-four archaeological sites are documented through surface collections, test excavations, and/or information from private collectors. An additional 23 localities are described, but lack of sufficient data to be considered as actual sites. Significant water erosion has eliminated 7 sites completely and severely damaged all but one of the remaining 17. Two of the remaining sites have significant data for nomination to the National Register of Historic Places. Immediate mitigation is recommended for these two sites.		

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Cultural Resources Inventory of Lands Adjacent to Lake Winnibigoshish

Submitted to

U. S. Army Corps of Engineers
St. Paul District

by

Elden Johnson, Principle Investigator
Christina Harrison, Field Director
Jeanne Schaaf, Laboratory Analyst

University of Minnesota

June 1977

Contract Number: DACW 37-76-C-0181

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Abstract

A reconnaissance archaeological survey of the shoreline of the Lake Winnibigoshish Reservoir was completed in 1977 for the St. Paul District, U. S. Army Corps of Engineers. The survey was conducted under contract by the University of Minnesota with Christina Harrison as field director, Jeanne Schaaf as laboratory analyst, and Elden Johnson as principle investigator.

Twenty-four archaeological sites are documented through surface collections, test excavations, and/or information from private collectors. An additional twenty-three localities are described, but lack sufficient data to be considered as actual sites.

Significant continuing water erosion has eliminated seven sites completely and severely damaged all but one of the remaining seventeen. Two of the remaining sites have sufficient data for nomination to the National Register of Historic Places. Immediate mitigation is recommended for these two sites. Intensive testing and/or immediate mitigation is recommended for the remaining sites.

Intensive survey of the public use areas operated by the Corps of Engineers at the dam site was negative.

The range of archaeological sites and components extends from late glacial or early post-glacial to the modern period. The concentration of sites, the extended occupational continuum, and the associated paleoecological record are documented.

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A. Introduction

The Lake Winnibigoshish reconnaissance archaeological survey was conducted in the summer of 1976 and the late spring of 1977 by archaeologists from the University of Minnesota under contract to the St. Paul District, Corps of Engineers. The survey was designed to determine the presence and nature of significant cultural resources of an archaeological nature and was initiated by St. Paul District personnel after recognition that their control of water levels on the six major Mississippi River headwaters reservoirs (Leech Lake, Lake Winnibigoshish, Pokegama Lake, Big Sandy Lake, Gull Lake, and the Whitefish chain) gave them responsibilities, at least in part, for an archaeological inventory and an assessment of sites located for both impact of water caused erosion and significance for purposes of National Register of Historic Places nominations. The total review was begun with a general environmental review, based on record search, for the headwaters reservoirs which was completed by staff members of Bemidji State College in 1973, and cultural resource field reconnaissance surveys were then projected for each reservoir. This is the first of those survey projects.

The scope of work under which this work was undertaken called for:

- (1) an identification of archaeological sites along the shore and on Corps of Engineers lands,
- (2) a determination of the areal extent of sites located,
- (3) an evaluation of sites as potential nominees to the National Register of Historic Places,
- (4) an assessment of the effects of erosion on the sites,
- (5) recommendations for mitigation of sites threatened by erosion or other disturbance,

(6) and specific intensive survey of developed and potential public use areas under Corps of Engineers jurisdiction at the Lake Winnibigoshish dam site. It was further understood that the report would include information on shoreline erosion and vegetation cover for the entire perimeter of the reservoir.

Lake Winnibigoshish is a natural lake through which the Mississippi River flows from northwest to southeast shortly after its origins in Lake Itasca. The U. S. Army Corps of Engineers constructed and has operated a dam at the Mississippi River outlet of the lake since 1884. The normal pool elevation is 1,299 feet above mean sea level with the dam structure regulating water levels between a six foot minimum and a 14.2 foot maximum level. Controlled water level fluctuations of 8.2 feet are thus possible, and, in fact, occur at relatively frequent intervals.

The construction of the dam and the raising of the impounded waters approximately eight feet enlarged the reservoir area capturing the adjacent, but formerly separate, Sugar and Cut Foot Sioux Lakes, enlarging the Third River Flowage several times, and encroaching on the upland beyond the original Lake Winnibigoshish shoreline to approximately the 1,300 foot contour. The Lake Winnibigoshish drainage basin of approximately 1,492 square miles has remained constant, but the ratio of water to land areas has increased significantly. These shoreline and water level increases have had a significant negative impact on the archaeological resources of the reservoir area.

A later section will also show that the present Lake Winnibigoshish is a relatively recent postglacial phenomenon and that its present historic form and its location on the main channel of the Mississippi River changed it from a pair of small isolated ice block lakes to its present form as a

large shallow basin averaging less than 20 feet in depth. These facts too have important archaeological implications.

The 1976 summer field reconnaissance was directed by Christina Harrison, assisted by University graduate students Jeanne Schaaf and Martha Hopeman, and University undergraduate Paul Hundley. The survey procedures involved a walking survey of the entire shoreline with an examination of open eroding bank faces, survey of dry beach sands, and the shallow water covered beaches. The upland back of the beach area was walked inland to 50 meters or to an elevation of 1,305 feet to locate surface indications of archaeological remains (i.e., burial mounds, house depressions, rice threshing pits, etc.). When cultural materials were located in any of these contexts, shovel tests were made in the undisturbed inland zones to determine if materials were present in place, and if so, to obtain some indication of their extent. Special intensive testing was conducted at the Corps dam site where a known site existed and where the scope of work called for a more detailed examination of present public use areas.

Previous record search, consultation with local informants, and with personnel of the Chippewa National Forest headquarters provided the field crew with information of shoreline localities where a few archaeological sites had been documented through collections or where there were verbal or record indications suggesting the possibility of sites existing.

Students enrolled in a University archaeological field school at Mille Lacs under the direction of Elden Johnson and Janet Spector also assisted with shovel testing on two separate occasions.

The shoreline survey met problems, as might be expected. Two factors greatly facilitated the work, however, with 1976 extremely low water levels providing unusual beach exposure as the major aid. A second factor of

importance is the fact that the majority of the shoreline of this lake is held in public ownership and is therefore not disturbed by the usual intensity of private summer cabins, docks, and resorts that are seen on the majority of larger lakes in this important recreation area. Much of the shoreline is owned by the Chippewa National Forest, some by the Leech Lake Band of Ojibwa, and some by the Minnesota Department of Natural Resources. In addition to limiting private construction, this factor of public ownership eliminated much of the problem associated with obtaining individual owners' permission for access.

Difficulties during the survey came from several sources. First, the contract was not completed until early July, which meant that the summer field work was conducted when the shoreline second growth vegetation was at its peak, making upland reconnaissance most difficult. We had anticipated this and had planned to hold the shovel testing of several possible sites until fall after frosts had cleared much of the vegetation. About the time that we were to return to the sites, the extreme drought of 1976 resulted in a complete ban on any access to Chippewa National Forest lands which lasted into the early winter and prevented any shovel testing. This forced us to return to the area late in the spring of 1977 and because most of the sites had to be reached by watercraft, we were delayed until the ice was gone from the lake at the end of April. The last segment of the survey was, therefore, hurried and intensive.

Analysis of the survey data in the archaeology laboratory was conducted by Jeanne Schaaf assisted for a time by John Anfinson, a University undergraduate student. Surface and test pit materials from the survey were accessioned and analyzed, site data collated, and materials from three private collections accessioned and analyzed. These latter collections were provided

particularly useful in augmenting the limited data accumulated by the survey teams for some of the sites. Most important were the collections and the data furnished by E. F. Creech of Cass Lake who kept collections from separate localities segregated and who had associated information in the form of location maps, personal notes, and an incredible fund of personal information. The collections of William Marshall of Grand Rapids add very useful information on the site at the dam and that at the north side of the Mississippi River inlet. The collection of Mr. and Mrs. Karau from the single site at Williams Narrows provides a range of data that greatly expands that from our reconnaissance survey and testing.

The present report has been written jointly by Jeanne Schaaf and Elden Johnson. Some segments represent a joint effort, others are individually written. That on the geologic setting, paleoecology, climate and vegetation history that follows was written by Jeanne Schaaf. The review of the archaeological context was done by Elden Johnson as was this introduction. The conclusions and recommendations are those of Elden Johnson.

It is impossible to thank the many people who assisted with the project in one way or another, but I wish to mention particularly Richard Berry and Daniel Bowman of the St. Paul District of the Corps of Engineers who were respectively the Contracting Officer and the Environmental Resources Branch archaeologist directly involved with the project. Stanley Johnson of the Chippewa National Forest headquarters provided considerable information and assistance as did the District Rangers whose jurisdiction included Lake Winnibigoshish. I have already mentioned the three major archaeological collections and their owners who freely gave of information that has been extremely important. Their cooperation is sincerely appreciated. Finally, Christina Harrison who directed the field survey and Jeanne Schaaf who

provided the analysis gave more of their time, effort and knowledge than required by the parameters of their employment and are certainly responsible with their assistants, Martha Hopeman, Paul Hundley and John Anfinson, and volunteers Carol Remus, Sarah Schmuck and Bradley Johnson, for any contribution this project may make to cultural resource management.

B. Environmental Setting

Geology and Soils

The bedrock underlying the Lake Winnibigoshish area is patchy Cretaceous sandstone and clay, overlain by a 200 to 300 foot thick deposit of glacial drift. The surficial drift was deposited 12,000 years ago during the Alborn phase of the St. Louis Sublobe of the Des Moines lobe of the late Wisconsin glaciation (Wright, 1972) (see Figure 1).

Lake Winnibigoshish lies at a contact zone between loamy glacial till and outwash sands. The till is a pebbly clay, ranging from light to dark reddish brown and contains clays from reworked lake deposits derived from glacial lakes to the immediate east. Glacial cobbles and boulders (which are predominantly crystalline) are common along the shore of the northern portion of the lake.

Lake Winnibigoshish is bordered by loamy glacial till on the west and northwest shore; lacustrine salts and clays (possibly from an extension of Glacial Lake Agassiz) on the north shore; outwash sands on the north, northeast, and east shore; and an extensive dune formation of fine, wind-blown sand on the east and south shore. (see Figure 2) (Grigal, Severson, Goltz, 1976).

A sequence of five buried soil horizons is exposed in the high sand bank ("Highbanks") located southeast of Tamarack Point in Sections 29, 32, and 31 of T146N, R27W, and Section 6 T145N, R27W.

The oldest and lowest of these soils has been radiocarbon dated at 7910 ± 155 B.P. (I-6796). It is a continuous horizon paralleling the lake level about 6.2 meters above it. It represents the original postglacial soil developed in the cross-bedded outwash sands.

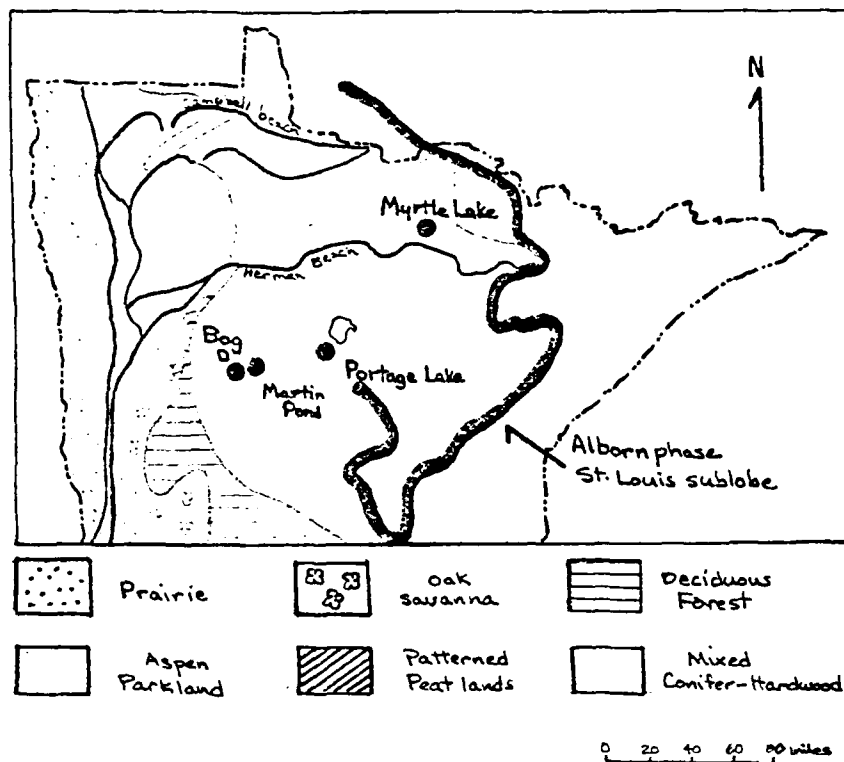


Figure 1: Location of pollen core sites, present major vegetation types, extent of the last recorded ice advance, and major beaches of Glacial Lake Agassiz.

This soil is the only horizon of the sequence with an iron-rich B-2 layer and an A-1 layer with carbonate pipestems on charcoal fragments. It is also the only continuous soil layer of the five. The interpretation suggested by Grigal et al. is that the red color and high iron content of the B-2 horizon reflect cool, moist conditions and a vegetation cover of upland conifers. The dark A-1 horizon was formed c.a. 8000 B.P. when fires and drier conditions led to a breakdown of the forest cover, replacing it with herbaceous grass cover or oak savanna. Increasing warmth and dryness further impoverished the vegetation, exposing the ground surface to wind erosion, which deposited sand over adjacent surfaces. The four discontinuous buried soils above the lowest, indicate that this instability was periodic and continued until more recently than 5000 B.P. (The third horizon above the oldest was C^{14} dated at 5040 ± 105 B.P. [I-6797.]) The implication is a long-term climatic trend toward a thermal maximum. This interpretation is consistent with paleo-climatic reconstruction based on information from pollen cores, discussed below.

The source for the fine sand is ascribed to the lake basin itself. Evidence indicates that the early postglacial route of the upper Mississippi River was probably through Leech Lake, completely bypassing Lake Winnibigoshish. Grigal et al. propose that most of the present lake was once a level outwash delta of fine sand. Two large ice block lakes occupied the basin (now marked by two deep areas in the basin topography). A number of smaller lakes or ponds were also probably present. During the thermal maximum, lake levels dropped exposing most of the basin to wind erosion. Over a long period of time the extensive dune field was formed. Orientation of the dunes show that the prevailing wind was from the northwest. When water levels returned to present conditions as the climate became cooler and more moist and when

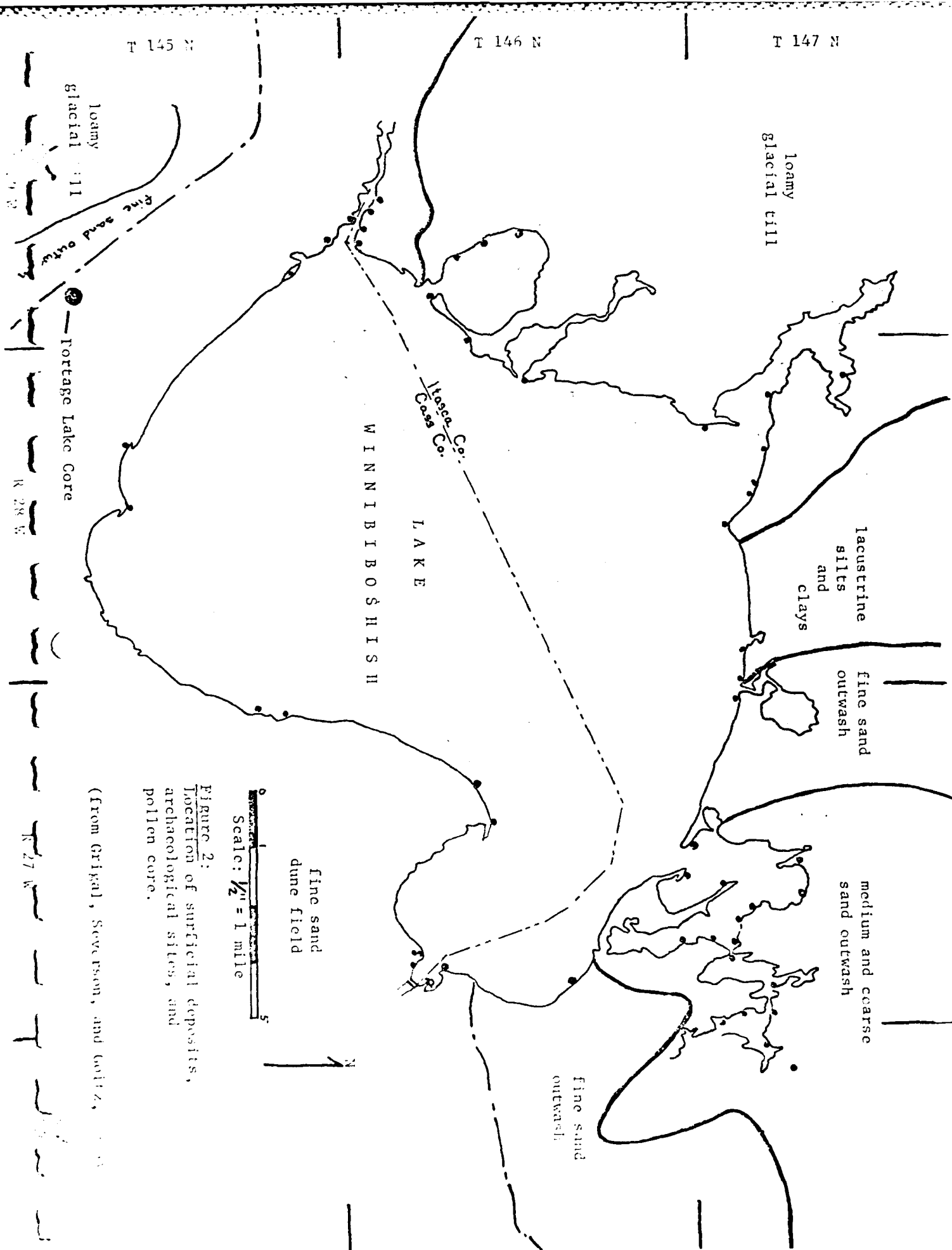


Figure 2:
Location of surficial deposits,
archaeological sites, and
pollen core.

(from Grigal, Severson, and Goltz,

the course of the Mississippi River shifted northward, Lake Winnibigoshish became one large lake. Thus, roughly 4,000 years ago, slopes became revegetated, the dunes became inactive, and Lake Winnibigoshish came to resemble the lake that exists today.

Climate

The climate of Lake Winnibigoshish and environs is continental; having warm, short summers and cold winters. The weather is influenced by air masses originating in three sources:

- (1) southern maritime-tropical air (warm, moist)
- (2) northern continental-polar air (cold, dry)
- (3) western continental-interior air (dry)

The winter (January) average temperature is 5°F and the summer average is 65°F. Precipitation ranges from 17 to 38 inches per year (28 inches on the average). Annual snowfall ranges from 43 to 50 inches. There are approximately 100 frost-free days (Bemidji State University, 1973).

The area lies in the belt of prevailing westerly winds; however, seasonal winds deviate in prevailing wind direction.

Vegetation

Lake Winnibigoshish lies entirely within the Mixed Coniferous-Hardwood vegetational formation. This forest type is characterized by Pinus strobus (white pine) and P. resinosa (Norway or red pine). It also contains genera characteristic of the Boreal Forest, such as Abies (fir) and Picea (spruce) and members of the Deciduous Forest such as Quercus (oak), Acer (maple), Tilia (basswood) and Ulmus (elm) (McAndrews, 1966).

The vegetation bordering Lake Winnibigoshish is discussed in three sections:

- (1) paleo environment
- (2) pre-logging
- (3) present

Paleo environment: Information provided by a number of pollen cores from north central Minnesota was utilized to construct a postglacial climatic history of the Lake Winnibigoshish area. The following chart, Figure 3, summarizes this information. Bog D and Martin Pond are presently located in the Pine-Hardwood Forest, approximately 60 miles west of Lake Winnibigoshish. They are the easternmost pollen cores of the Itasca transect analyzed by John McAndrews (1966). Portage Lake is located just 1.5 miles southwest of Lake Winnibigoshish. The unpublished diagram from the core and a brief preliminary interpretation were kindly provided by J. McAndrews. Myrtle Lake is located approximately 50 miles to the northeast of Winnibigoshish and is situated in the patterned peatlands which occupy the basin of Glacial Lake Agassiz. (See Figure 1 for location of the pollen sites and major vegetation formations.)

The Portage Lake core and study by Grigal et al. of the surficial soils bordering Winnibigoshish provide a fairly detailed account of the paleo climatic history of the immediate area around the lake. The Bog D, Martin Pond and Myrtle Lake cores provide a broader view of the regional paleo climatic sequence.

Active glacial ice withdrew from northern Minnesota c.a. 13,000 to 12,000 B.P., leaving behind buried blocks of ice. These ice blocks rapidly melted as the climate warmed, forming numerous lakes which dot the surface of the outwash plains and moraines. Two such lakes probably existed in the basin of Lake Winnibigoshish at this time, as was discussed in the above section.

Figure 3

Table summarizing pollen cores from north-central Minnesota. C¹⁴ dates indicated.

Years B.P.	Bog D	Martin Pond	Portage Lake	Lake Winnie	Myrtle Lake
1000		<u>Pinus resinosa</u> <u>Banksiana</u>			
2000	<u>Pinus strobus</u> <u>Picea-Larix-</u> <u>Abies</u>	<u>Pinus Strobus</u> (decreased summer temp. shorter growing season inc. snowfall)	<u>Pinus strobus</u> with <u>Betula-Pinus</u> <u>resinosa</u> and <u>P. banksiana</u>		<u>Pinus strobus</u> <u>Picea-Larix-</u> <u>Abies</u> (form. of peat swamps and f 2680 ± 120 (raised bog formation)
3000	<u>Quercus-Ostrya</u> (greater soil moisture)	<u>Quercus-Betula</u> (Mesic Decid. Forest)	cooler, moister 3685 ± 115	inundation of lake basin. Miss.R. inlet	<u>Betula- Quercus</u> <u>Pinus</u>
4000				basin stabilization	4840 ± 120 (rich swamp formation)
5000			<u>Quercus-</u> <u>Ostrya-</u> <u>Gramineae</u>	DROUGHT (wind erosion and dune formation)	<u>Pinus strobus</u> <u>Quercus</u> (oak savanna)
6000	<u>Quercus-</u> <u>Gramineae-</u> <u>Artemesia</u>	Prairie - Oak savanna & oak groves around lakes	(patches of eric decid. forest in oak savanna)	Oak savanna Herb or cover	<u>Quercus-Ostrya</u> <u>Ambrosia peak</u> temperature p <u>Quercus- NAP</u> 7850 ± 120
7000	<u>Ambrosia peak</u> (Prairie: Maximum Temperature and aridity)		<u>Artemesia peak</u> 7320 ± 120		
8000	<u>Quercus rise,</u> <u>NAP rise</u> 8560 ± 120		<u>Pinus</u> <u>banksiana</u>	Forest breakdown (fires; drier)	<u>Pinus banksia</u> <u>Pteridium-</u> <u>Betula- Abies</u>
9000			9780 ± 140		<u>Picea- Pinus-</u> <u>Pinus-Larix</u> 10,150 ± 160
10,000	<u>Pinus banksiana</u> <u>-Pteridium</u>	<u>Pinus</u> <u>banksiana</u> forest	<u>Picea</u> with <u>Betula and</u> <u>Artemesia</u>	Upland conifers cool, moist	<u>Picea- Betul</u> <u>Larix</u>
11,000	11,000 ± 90				
	Boreal Forest <u>Picea- Populus- Betula-</u> <u>Ulmus- Fraxinus- Artemesia</u>			2 ice-block and scattered penis in lake basin. Miss. bypass through Leech Lake	
12,000		Ice Block Lake Formation			
13,000		ACTIVE ICE DISAPPEARS			

Pollen evidence indicates that at roughly 12,000 years ago a spruce forest covered this area. Other arboreal species present were Populus (aspen), Betula (birch), Ulmus (elm) and Fraxinus (ash). Artemesia (ragweed) pollen is present in significant amounts suggesting the existence of park-like openings in the spruce forest. There is no modern analogue to this assemblage because of the striking absence of Pinus. (Perhaps this is a reflection of a lag in the migration of Pinus following deglaciation rather than of climatic factors.) The closest analogue is the southern Boreal Forest in southern Manitoba and Ontario. This analogue has a lower mean annual temperature (20°F) and a lower mean annual precipitation (20 inches) than the area occupied by the extinct spruce forest has today. This spruce forest existed until 9780 ± 140 B.P., when warmer climate caused it to be replaced by a Pinus banksiana (jack pine) dominated forest (probably an eastern immigrant) (McAndrews, personal communication). This forest was similar to the pre-settlement/logging vegetation except for the absence of Pinus strobus. Such a situation would indicate an increase of 6.5°F in annual temperatures and an increase of 5 inches in precipitation (McAndrews, 1966).

As the warming trend continued, the jack pine forest was replaced by a Quercus-Ostrya-Gramineae (oak-ironwood-grass) community by 7320 ± 120 B.P. (McAndrews, personal communication). This is thought to have been patches of xeric deciduous forest in a general matrix of an oak savanna. An Artemesia peak at 7200 B.P. marks a time of maximum temperature and aridity. The Iva ciliata (marsh elder) peak, also at this time, is an important climatic indicator because it is a southern, saline species and does not occur in Minnesota today. Widespread aridity is indicated by lowered lake levels recorded in pollen fluctuations in cores from all throughout the state. Oaks persisted at this time because of the irregular to rugged topography and

numerous lakes which afforded fire shelter. The annual temperature at this time is estimated to have been 40°F and the annual precipitation, 22 inches. During this period, the basin of Lake Winnibigoshish was essentially a blow-out and wind erosion of the fine lake-basin sands formed the extensive sand dune field to the southeast of the present lake.

A climatic reversal is marked at 3685 ± 115 B.P. in the Portage Lake core. The oak savanna was invaded by white pine and other conifers shortly thereafter. The deciduous forest species still persisted but the prairie species essentially disappeared. The implications are an increase in soil moisture and possibly a decrease in mean annual temperature. Sometime during this period the Lake Winnibigoshish basin was flooded and the Mississippi River diverted its course from Leech Lake to its present route through Lake Winnibigoshish.

Wild rice was beginning to make an appearance at this time. It is unlikely that it was present before 3700 B.P. because the water would have been too saline.

Pre-logging vegetation: The vegetation bordering Lake Winnibigoshish before logging was very similar to what it is today. Figure 4 illustrates the probable pre-settlement vegetation distribution. (Taken from the Original Vegetation of Minnesota map compiled from original land survey notes by Frank Marschner [1930].)

Even-aged stands of Pinus banksiana mixed with a few P. resinosa grew on the dry, nutrient-poor sandy outwash plains, as they do today. Some Quercus macrocarpa (bur oak) were locally present and open areas had a ground cover of Pteridium (bracken fern) and lichens. The even-aged stands represent reproduction after fire. Burned over areas were frequently noted in the original survey records. After a fire, luxuriant growths of prairie grass



Figure 4: Pre-logging Vegetation
(from Marschner's Original Vegetation of Mn)

- Bigwoods: Oaks (Bur, White, Red, Black), Elm, Basswood, Ash, Maple, Hornbeam, Aspen, Birch, Wild Cherry, Hickory, Butternut, Bl. Walnut, etc. with some White Pine.
- Jack Pine Barrens and Openings: Jack Pine with Oak, Aspen, Hazel-bush and some Norway Pine.
- Aspen-Birch-(Conifer): Will eventually become conifer. Includes White pine, Balsam, Fir, Birch, Spruce and Arborvitae.
- Wet Prairie, Marshes and Sloughs: Marsh grasses, Flags, Reeds, Rushes, Wild rice, with Willow, Alder bush in places.
- Conifer Bogs and Swamps: Spruce, Tamarack, Cedar and Balsam.
- White and Norway Pine
- White Pine
- Lakes

would have temporarily succeeded the P. banksiana forests, until saplings could mature and regain dominance.

Peat lands supported conifer bogs with Picea and Larix (tamarack) dominating.

The richer till soils supported heavy stands of white and red pine and small areas of hardwood forests ("Big woods"). McAndrews has reviewed the original land survey notes from 1871-79 for adjacent Hubbard Company. His description of these forests based on the records most probably is an accurate representation of the local stands at Lake Winnibigoshish as well:

"On the till soils, the most striking feature of the survey notes was the many large Pinus strobus and P. resinosa. Bearing-trees were up to 34 inches in diameter, with trees 20-30 inches not uncommon. Trees of this diameter are usually between 100 and 120 feet high, well above the usual 80 feet maximum of hardwoods. Pines of this size may reach an age of 300-500 years

"These pines, especially P. resinosa, tend to occur naturally in small, even-aged stands of a few acres, under a variety of soil conditions. P. strobus usually occupied the better soils and occurred as scattered individuals of uneven ages. In addition to the large pines, there were scattered stands of younger pines that would eventually replace the larger older trees.

"In contrast to the large pines were the widespread even-aged stands of P. banksiana and hardwoods dominated by Populus tremuloides (trembling aspen), P. balsamifera (balsam poplar), and Betula papyrifera (paper birch). The larger trees of these species were 12-14 inches in diameter and perhaps 40-70 years old. The hardwoods are fast-growing pioneers, especially adapted to repeated fires. They are killed by fire, but reproduce vegetatively" (McAndrews, 1956).

One of the major changes in forest succession since white settlement is brought about by fire suppression. In the absence of fire, shade tolerant species such as Abies balsamea (balsam fir), Picea glauca (white spruce), Acer saccharum (sugar maple) and Tilia americana (basswood) succeed the shade intolerant Populus-Betula communities. These shade tolerant species represent the climax forest in the area today, but were uncommon in the survey notes.

By 1920 the pine forests were completely logged over. Those representatives of these communities present today have grown since logging and are protected within the Chippewa National Forest.

Present vegetation: The shoreline of Lake Winnibigoshish varies considerably in local relief and correspondingly, the plant communities it supports are complex and are often found grading into one another between topographic sites.

Thus, mixtures of species representing different communities and occasionally nearly pure stands of aspen, birch, pine, spruce, or tamarack are found. (See Figure 5 for a representation of dominant timber types.)

Progressing inland from the shore, vegetation cover changes abruptly from beach to bank to upland forest or back swamp communities. In part, the diversity of the shoreline vegetation reflects the unstable topography immediately adjacent to the lake and subject to severe erosion, and other disturbance of natural plant succession, such as logging or landscape development.

Present vegetation can be most simply described by dividing it into categories based on relief:

- (1) Lowlands
 - (a) Fen or marsh
 - (b) Bog forests

(2) Uplands

(a) Nutrient-poor, sandy outwash soils

(b) Nutrient-rich tills

Lowlands: The two chief plant communities supported in the lowlands are fen or marsh and bog forest. Fen commonly forms a fringe along the shoreline and flowages. This community is dominated by Carex (sedges) and Phragmites (reeds), with Typha (cattail), Scirpus (rushes) and shrubs such as Betula pumila (swamp birch), Salix spp. (willow) and Alnus rugosa (speckled alder). Beds of Zizania aquatica (wild rice) are found in shallow water associated with stream or river flowages.

Conifer bogs are abundant in this area. Important species supported on deeper, wetter peats are Larix, Picea mariana (black spruce), and less commonly, Thuja occidentalis (northern white cedar). The shallower, drier and more fertile peats support Abies balsamea, Fraxinus nigra (black ash) and Ulmus.

Uplands: On dry, sterile outwash sands are stands of Pinus banksiana mixed with a few P. resinosa and some Quercus. Where the cover has been destroyed by fire, the area has been overtaken temporarily by Pteridium and prairie grasses. Rich till soils support Pinus resinosa mixed with a few P. banksiana on coarser textured soils and P. strobus on finer-textured soils.

The climax forest is a maple-basswood association found on higher ground usually behind elm-ash stands; rarely found adjacent to the lake shore.

Extensive stands of pioneer hardwoods (Populus, Betula) and Pinus banksiana are being invaded by young sugar maple and will eventually be succeeded by it. A detailed inventory of ground, shrub and canopy species of six different

plant communities bordering Lake Winnibigoshish was conducted by Bemidji State University, and complete lists of the species identified are available in the Headwaters Environmental Review, 1973.

Erosion

Rapid and severe erosion is a serious problem on Lake Winnibigoshish. Many miles of shoreline are subject to intense erosion and numerous tree falls attest to continual undercutting of the banks. (See map in back pocket.) Extensive sand flats formed from the spread of eroded deposits are common all along the lakeshore. Some of these deposits extend hundreds of meters out into the lake. When the water level was lowered due to the drought of this past summer, many of these flats became exposed.

G. E. Goltz of the Chippewa National Forest Service reports that water levels between elevations of 1298.94 and 1299.44 feet cause "significant erosion"; levels between 1299.44 and 1299.94 feet cause "major erosion"; and levels over 1299.94 feet result in "rapid and serious erosion" (Goltz, 1972).

Records of maximum and minimum lake level stages provided by the Hydrology Division, U. S. Corps of Engineers for the years 1930 through 1975 show that from 1938 to 1975 maximum stages of operation were between 1299.62 feet and 1304.23 feet. For the greater part of this time the operating stage was over 1300 feet. That is nearly 40 years of continuous rapid and serious erosion according to Goltz's standards.



Photo 1. Erosion of sandy soils on the south shore.



Photo 2. Bank slumping caused by wave action undercutting the soil.



Photo 3. Eroded stoney point with extensive shallows.



Photo 4. Bank slumping on east shore.

C. The Cultural Context

The Lake Winnibigoshish area from the post-Pleistocene to the contemporary period represents a critical region in the understanding of human adaptation. As seen, the region has witnessed significant climatic, vegetation and associated physical changes through time; all of which necessitated alterations in human cultural systems as mechanisms of adaptation. Despite the area's significance, very little is known of the prehistoric and early historic period cultures and what is known presents us with a minimal framework of chronology and major cultural shifts. The Lake Winnibigoshish immediate area, despite the major destruction of sites, still provides a potential for significant research because of the presence of undisturbed buried soil horizons, excellent paleoecological data tightly controlled chronologically, and remaining stratified archaeological sites.

The culture history of the region can be classified into seven major periods with fair chronological controls. These periods are:

Recent: 1920 to date. Recreational, small farming, small logging.

Intensive resource use: 1880 to 1920. Logging, mineral extraction to the east, homesteading.

Fur trade: 1750 to 1880. French, British, American (sequential) fur exploitation in association with the intrusive Ojibwa Indians, culminating in the establishment of Indian reservation systems.

Initial historic: 1660 to 1750. Initial French contacts; Yanktonai Dakota and Assiniboin populations.

Late prehistoric: 800 to 1660. Intensive wild rice/bison economic systems; Blackduck and Sandy Lake complexes.

Middle prehistoric: 200 B.C. to 800 A.D. Earliest ceramic complexes; earliest burial mounds; net and fabric impressed ceramics; very low population density.

Early prehistoric: Terminal glacial to 200 B.C. Possible big game hunters succeeded by Early Archaic and later "Old Copper" pre-ceramic hunting/gathering societies.

Early Prehistoric-Terminal Glacial Period

Evidence for any human populations in the beginning phases of this period which is initially characterized by cool, moist climate and a pioneer spruce-parkland vegetation has been minimal in the entire northern one-third of Minnesota until the Lake Winnibigoshish survey. Examination of numerous surface collections throughout this northern area showed no evidence of the fluted projectile points characteristic of the Llano complex dated at this terminal glacial horizon to the west and south. Stoltman's description of prismatic blades from the Rainy River (1973) offered the only remote suggestion that human populations were present during this very early period. The Williams Narrows site in the Lake Winnibigoshish reservoir area has, however, produced a projectile point similar in form to Folsom fluted and which has crude fluting on each face. The completely eroded Lake Harry site has a single Alberta point, probably slightly later in time. The presence of a continuous deeply buried soil horizon associated with this chronological period, the evidence from the Lake Harry and Williams Narrows sites suggests that the potential for in-place cultural materials from this horizon definitely exists, particularly on the north side of the present reservoir shoreline where the buried soil is uniformly present. The possibility of a persistent mammoth/mastodon fauna and human associations is quite real, making the Lake Winnibigoshish reservoir area critical in western Great Lakes prehistory.

The succeeding period of warming and drying climatic conditions that culminate in the post-glacial thermal maximum with an oak-savannah vegetation

offers better evidence for human occupation. The Lake Itasca Bison Site excavated by C. T. Shay (1971) at a location near the source of the Mississippi River southwest of Lake Winnibigoshish document some aspects of this period at 7,000 to 9,000 B.P. horizon. Jack Steinbring and James Whelan's (1971) synthesis of the Plano complexes of the Duluth reservoir system and areas to the north indicates a population culturally distinct further to the east occupying a region beyond the oak-savannah intrusion and characterized by a mixed coniferous/deciduous vegetation. The Lake Winnibigoshish area, lying between these two regions, but close to the eastern edge of the oak-savannah penetration, may offer data on the interaction between these two cultural systems. Again, the Williams Narrows site would appear to offer the greatest potential in understanding this problem. The Winnibigoshish lakeshore proper offers little possibility as it was at the climax of this period that the lake basin itself was formed and the recent pre-dam shoreline established.

Following the establishment of that shoreline and the shift toward cooler, more moist climatic conditions together with the invasion of pine from the east, human populations seem to have quickly taken advantage of the new environmental setting. Evidence from several sites on Cut Foot Sioux and Lake Winnibigoshish itself indicate late Archaic occupations, many of them characterized by the presence of copper tools. This is again a sub-period that is very poorly known at this time and where remaining sites on the Winnibigoshish reservoir may offer important data. The White Oak Point Site on the Mississippi River east of Lake Winnibigoshish was excavated by L. A. Wilford (1955) and subsequently reanalyzed by Edward Lugenbeal (1977). The site shows a definite preceramic component with associated copper. To the north, Steinbring (1975) has described a similar component on Rainy Lake and

Johnson (1964) has described a series of surface finds of copper tools of this age from the basin of glacial Lake Agassiz. Other than the presence of the complex and some typological analysis, practically nothing is known of subsistence patterns, settlement systems, or modes of adaptation.

Middle Prehistoric Period

This is again a poorly known period in the Lake Winnibigoshish region, though the evidence that does exist indicates a distinctive cultural system lying geographically between the well described Laurel Tradition to the north (Stoltman, 1972; Lugenbeal, 1976) and the Malmo culture to the immediate south (Wilford, 1953). Laurel is characterized by a ceramic tradition with smooth vessel surfaces, varieties of dentate stamping, and large conoidal vessels; a burial mound emphasis with large, cumulative or accretional mounds; a riverine adaptation but with subsistence patterns utilizing the large fauna (bison) of the adjacent western prairies as well; and an association with a cultural continuum extending north of the Great Lakes to the Point Peninsula cultures of New York. Malmo, on the other hand, is located in a mixed deciduous area, is primarily a lakeshore oriented culture, and shows affinities (though very dilute) with the Havana Hopewellian cultures of Illinois, eastern Iowa and southwestern Wisconsin. Mound burial is characteristic, and is a burial in circular, dome shaped mounds. Malmo mounds, however, are rarely cumulative, and the burial mode is quite distinctive with its shallow central pit, secondary bundle burials, a covering cribwork of slender branches and an associated fire.

The Lake Winnibigoshish region has produced a very few Laurel sherds and no mounds with Laurel characteristics. Malmo is apparently not present in this area. Early ceramics that do exist suggest a complex intermedia

geographically but contemporary with Laurel and Malmo. The linear mounds at the dam site, the presence of fabric and net impressed pottery sherds and elongate side notched projectile points are most similar to the complex at the Gull Lake Site (Johnson, 1971) and the Langer Site (Neumann, 1975). Lugenbeal (1976) has recently suggested that the ceramics belong to a "Brainerd Ware" antecedent to Blackduck but contemporary with Laurel.

The Lake Winnibigoshish sites remaining offer some potential, but many of the details can probably never be worked out in adequate fashion for the immediate area because of the destruction of key sites through water erosion.

Late Prehistoric Period

This is the best understood of the prehistoric periods and shows the greatest concentrations of populations. The increase in population is primarily a function of the intensified utilization of wild rice as a subsistence staple. Two sequential cultural complexes center in this headwaters of the Mississippi River region--Blackduck and Sandy Lake. Blackduck as defined by L. A. Wilford (1941) is a cultural unit characterized by ceramics with globular vessels, cord marked exteriors, flaring rims, wedge shaped lips, and decorative patterns combining cord wrapped dowell, punctates, and vertical combing. Associated with this ceramic ware are triangular, unnotched projectile points, small end scrapers, tubular stone pipes, unilaterally barbed bone and antler projectile points, and primary pit burials in circular mounds. Blackduck dates range from approximately 700-800 A.D. to 1200 A.D. The initial Blackduck excavation occurred at a habitation site on Blackduck Lake, northwest of Lake Winnibigoshish, but numbers of Blackduck components at burial mounds, habitations, and specialized ricing activity sites have been excavated or tested in the general headwaters region. Blackduck has an extensive areal distribution when compared with the earlier regional cultures,

for it is found into the prairies of western Manitoba, eastward into Ontario, and succeeds the Laurel tradition phases of the Rainy River and northeastern Minnesota. It does not extend very far into the south of the headwaters region, however, and in Minnesota appears to be associated with the northern lake and riverine regions where conifers dominate the vegetation and where wild rice beds are extensive. The heart of the Blackduck area seems to be in the Lake Winnibigoshish and Leech Lake basins.

Succeeding Blackduck complexes is a varied tradition characterized by Sandy Lake pottery but with a more southern orientation and distribution. Sandy Lake pottery is characteristically cord marked, globular, but with little decoration--a ware easily distinguished from Blackduck (Cooper, Johnson, 1964). Many of the associated artifacts show a continuity with Blackduck--the projectile points, for example, are indistinguishable. Sandy Lake complexes too have an association with wild rice as a staple as does the preceding Blackduck and the majority of Sandy Lake habitation and activity sites in the headwaters region occur on the same locations as the preceding Blackduck.

Lake Winnibigoshish sites, as determined in this survey, are predominantly of this Late Prehistoric period, and while the majority offer little potential for additional data gathering through excavation because of the extensive site destruction, those that do offer this potential are particularly important. The reason for their potential significance is that they are seasonal sites that are not associated with wild rice harvesting or processing activities, but are perhaps winter camp sites, spring fishing sites, or other specialized activity sites. Lake Winnibigoshish is not a wild rice lake, nor has it been in the past. Sites adjacent to it should represent settlements and activity sites whose excavation would offer data

on seasonality and subsistence activities that are at this time very poorly known, as most Blackduck and Sandy Lake data come from ricing sites and/or burial mounds.

It should also be noted that the Sandy Lake distribution coincides with the distribution of sections of the historically known Dakota Indians. The association has been documented in excavations at Lake Mille Lacs (Lothson, 1972), and seems equally valid for the headwaters area. The Yanktonai Dakota group and their near relatives, the Assiniboin, most probably represent the historic representatives of this cultural complex.

Initial Historic Period

This period marks the movement of the earliest French fur traders into the region and, with them, the Algonkin-speaking Ojibwa Indians. This period also marks the beginning of severe tribal displacement with the Dakota groups, for example, shifting their locations to the west and southwest. It also marks the introduction of a new economic system characterized by Indian groups enmeshed in a French fur trade system where the native system is partially replaced by a pattern of increasing dependence upon manufactured goods obtained from the French in exchange for animals pelts.

The archaeological evidence for this initial European contact period is very slim in the headwaters region. Local residents seem certain that a French period fur trading post existed upstream from Lake Winnibigoshish in the vicinity of the river outlet of Cass Lake, but this suggestion has not been verified through any intensive testing.

Fur Trade Period

The maximization of the fur trade occurred from the early 1700's to the early 1800's and was dominated by the British (Hudson Bay, Northwest Company,

etc.) who established posts in the region using the Ojibwa, as had the French, as the trappers. This is also the period of conflict between the Ojibwa and the Dakota and the ultimate disappearance of the Dakota from these northwestern regions. Again, little archaeological research has been done on this period despite its importance for producing data on a significant period of culture change and also because of its potential for public interpretation.

Intensive Resource Use Period

This is the period of maximum cultural disruption and culture change and involved the movement of numbers of Anglo-Americans into the region to first log off the conifers, and then to establish small farming homesteads and construct railways. The impact on the native populations was devastating in that lands were ceded, reservations established, their economic base destroyed, and finally, lands within the reservation alienated through issuance of fee titles and the subsequent sale of lands to the intruding Anglo population.

The development of iron mining immediately east of the headwaters and the opening of the prairie country to the west were causally involved in the extensive railway construction and in causing a voracious demand for lumber.

The vegetational patterns of the headwaters region were completely altered, lake levels were modified with the construction of roller dams and other logging structures, and both village/town and isolated farmstead settlements came into existence. Attempts to save some of the natural habitats of the region were successful with the creation of Itasca State Park and the Minnesota (later Chippewa) National Forest. The period does represent, however, the first major modification of the natural features of the region through human activities--and those modifications were enormous.

Recent Period

Logging ceased as a major activity by 1920; reservations had been allotted and lands sold at the beginning of this period; and the peak of economic activity had passed. Homesteaders struggled to clear farm lands with poor soils and short growing seasons, and the economic base of the region deteriorated rapidly. The development of a recreation industry focusing on summer fishing and characterized by the construction of privately owned "resorts" developed rapidly to fill the economic void and persists today as the major economic force in the region. Many homesteads were abandoned after the first or second generation had worked the lands, and resident population has diminished except in the larger tourist centers. The region today is fairly stable though it remains an economically depressed region.

Summary

Archaeological and historic data indicate human populations were present in the region from the early postglacial period and that significant evidence exists for the analysis of human cultural change in the context of major shifts in climate and vegetation. Stress on the analysis of archaeological and historic data in the context of ecological theory is particularly appropriate in this region not only because significant climatic/vegetation changes have occurred but because these changes are so well documented through palynology and because the chronological control is excellent. It would be difficult to find many comparable regions where this combination of culturally and temporally varied archaeological sites, temporally changing climate/vegetation patterns, and excellent chronological controls exist. As an archaeological "laboratory" it is certainly superior, and while the Lake Winnibigoshish prehistoric and early historic sites have suffered severely

through erosion, significant sites do remain and do exist in a special setting crucial to the understanding of the cultures of the region.

D. Survey Results

This section contains the information on the archaeological/historic sites located and recorded by the field survey parties. These locations are divided into two categories which separate demonstrable sites, whether intact or destroyed, from scattered finds of artifacts in the water or on the beach but which were minimal in number and which showed no evidence of site materials in place above the beach line. Archaeological sites in the first category have been given site numbers and are recorded in the site records of the State Archaeologist. Localities in the second category have not been designated as sites and retain the field survey number.

In addition to the basic site data presented for each site, there is a statement offering an evaluation of that site's significance and any recommendations thought necessary for preservation, protection, or mitigation.

The information on each designated site is followed by a photograph of the site, a scale sketch map for those sites deemed significant, and photographs of representative artifacts from the survey collections and private collections if the latter were available. The location of the site and of the survey localities can be seen on the map found in the end packet of this report.

All accessioned survey materials, field notes, field maps, and photographic negatives are filed in the Archaeology Laboratory, University of Minnesota, and are available for study.

The designated sites in the first category and the find localities in the second category are given in numerical order. The site numbers refer to state (21), county (CA or IC), and numerical designation using the standardized recording system in general use in midwestern United States.

21-CA-17: Lake Harry Site

Location: NW $\frac{1}{4}$ Sec 2 T145N R29W (Creech's loc. is W $\frac{1}{2}$ NE $\frac{1}{4}$ Sec 2)

Description: Low marshy point, 1300' in elevation. Site has been inundated for some years and exact location is now uncertain. It is located south of the Mississippi River Inlet, near Lake Harry, which was formerly a small inland lake, now essentially a bay of Lake Winnibigoshish. Vegetation is a thick cattail and reed mat. The site is on land owned by Chippewa National Forest.

Cultural affiliation: Multicomponent; Early prehistoric (Paleoindian and Archaic); Late prehistoric (Blackduck).

Collections: E. F. Creech, Cass Lake.

U of M Accession No.: Temporary accession: CA-17-1 - 94

Material: No cultural material was recovered from the site by the 1976 survey. Creech's collection includes:
90 lithic artifacts
2 pottery rim sherds (Blackduck) and
3 body sherds

Discussion and recommendations: This very early and important site is complete destroyed. Only the E. F. Creech collection remains for analysis.



Photo 5. 21-CA-17 Early through Middle prehistoric projectile points (Creech collection).



Photo 6. 21-CA-17 Middle and Late prehistoric projectile points (Creech collection).

21-CA-39: McArdle Site

Location: SESE Sec 34 T146N R29W

Description: This site is located on a small point on the south bank of the Mississippi River just before it enters into Lake Winnibigoshish. The 4-5 m high sand bank is undergoing rapid and severe erosion, particularly on the east side where it is being undercut causing extensive slumping.

The steeply cut bank clearly shows a dark buried horizon containing charcoal, 20-25 cm below the surface.

The site has also been greatly disturbed by amateur collectors digging for artifacts.

All of the cultural material recovered was from the east side of the point. Most of this was found in the slumping bank, some in the shallow water below. Testing showed that very little of the site remains.

Local vegetation is dominated by jack pine and oak, with a dense understory of hazel bush.

The site is on land owned by the Chippewa National Forest.

Cultural affiliation: Late Prehistoric (Blackduck).

Collections: University of Minnesota, 1976.

U of M Accession No.: 801-17-(1-16).

Cultural material: University of Minnesota surface survey of the shallow water, beach, bank and upland yielded a thin scatter of material from a 100 m stretch along the east side of the point.

Shallow water: 3 flakes (quartz, quartzite and chert)

Eroding bank: 3 potsherds (1 with boss and cord wrapped stick decoration)

1 cord/grit

1 smooth/grit

A second surface reconnaissance in October 1976 yielded:

1 Blackduck rim sherd

1 dentate decorated sherd

3 body sherds (cord/grit)

2 flakes (brown chalcedony, quartz)

all from the eroding bank.

Testing: October 1976: Nine shovel tests and one 50x50 cm test unit were excavated at the site. Refer to accompanying sketch map for location of tests.

Typical stratigraphic profile of the tests:

0-5 sod and topsoil

5-20 buff sand

20-26 black sandy soil with charcoal

26-70 light brown sand

Shovel tests:

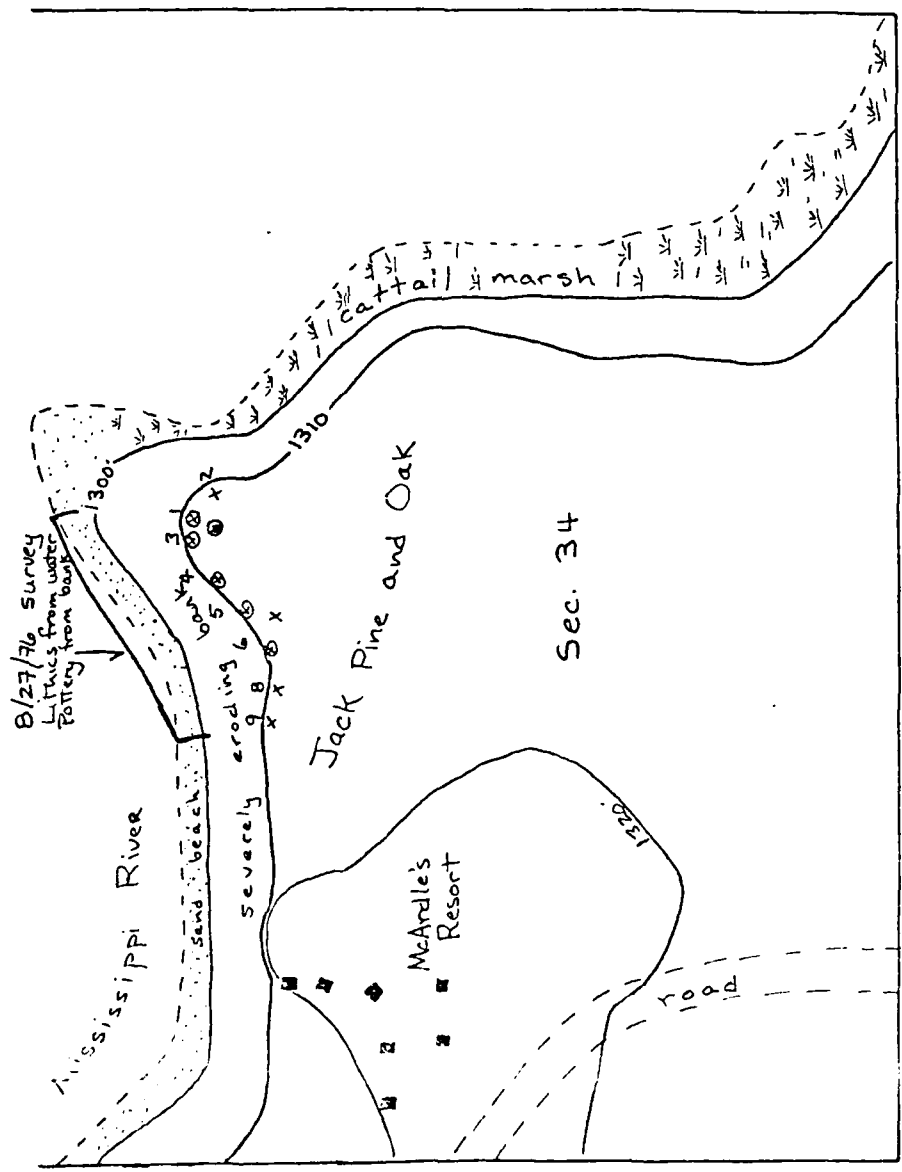
No. 1 excavated to 70 cm; soil examined by hand; 1 flake (basalt) at 25 cm.

No. 2 excavated to 60 cm; negative results.

No. 3 excavated to 75 cm; 1 retouched flake (grey chert) at 60 cm.

- No. 4 excavated to 70 cm; 1 possible hammerstone (smoothed and pecked) at 55 cm.
No. 5 excavated to 60 cm; 1 sherd at 37 cm; 2 bone fragments at 50 cm.
No. 6 excavated to 60 cm.; 2 sherds at 38 cm; 1 cortex flake at 40 cm.
Nos. 7-9 and 50x50 cm test unit; all negative.

Discussion and recommendations: Only thin and scattered remnants of this site remain and the severe active erosion will apparently destroy this remnant. In view of the paucity of materials remaining in place, no mitigation is recommended.



21-CA-39

SE 1/4 SE 1/4 Sec 34
T146N R29W
Raven Lake Quad

- x - shovel test; circled when positive
- ② 50 x 50 cm test unit

0 15 60 meter
Scale: 1 cm = 15 m.

21-CA-40: Tamarack Point

Location: Centre S $\frac{1}{2}$ Sec 21 T146N R27W

Description: This is a low, extended point of redeposited sand. Pioneer shrub and weed vegetation reflects the unstable nature of this point. Cultural material was recovered from the shallow water and beach along the north shore of the point. Test units were all negative but for a few possible flakes recovered from stratigraphy which suggests severe disturbance.

This point is from 1 to 2 km inland from the pre-dam shoreline. Shallowly submerged sand flats extend far out into the lake along this point. All evidence indicates that the site has been submerged and that the cultural material has been washed up and redeposited along the present sand point.

Cultural affiliation: Indeterminate

Collections: University of Minnesota, 1976

U of M Accession No.: 801-18-(1-7)

Cultural material: July 1976 surface reconnaissance of shallows and beach. Surface yielded material from two widely separated areas on the point.

Area A: Material collected from shallows and beach from 50 m on either side of boat launch:

- 1 retouched flake (banded jasper)
- 1 core (yellow chert)
- 2 flakes (quartz)

Area B: Material recovered from shallows and on beach along an 80 m stretch at the eastern-most extreme of the point:

- 1 projectile point (side notched, white chert)
- 7 flakes (6 chert, 1 quartz)

Testing:

Area A: Three screened 50x50 cm test units and two shovel tests were excavated to depths between 75 and 125 cm. No cultural material was recovered. Stratigraphy of the tests indicates periodic flooding and frequent disturbance. Typical profile (unit No. 2):

- 0-10 cm surface root layer; no developed topsoil
- 10-30 coarse tan sand
- 30-34 dark black silt and organic debris
- 34-40 fine white sand
- 40-44 dark black silt and organic debris
- 44-51 very fine yellow sand
- 51-58 dark black silt and organic debris
- 58-90 tan sand

Area B: Three screened 50x50 cm test units and four shovel tests were excavated to water table.

Test No. 1: Negative but for one possible flake

2 pieces modern glass at 65 cm indicating thorough disturbance of the deposit

0-40 cm fine sand alternating with four layers of root horizons

40-66 coarse sand

66-80 coarse sand with beach pebbles

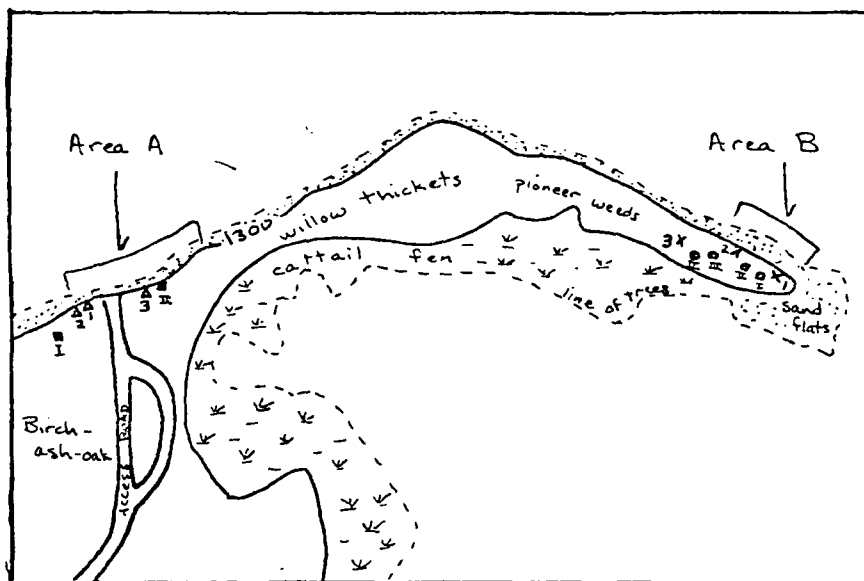
Test No. 2: 0-55 cm disturbed, churned up sand deposit with
four buried root horizons
two possible flakes recovered from this
matrix

55 water table

Test No. 3: Taken down to water table at 70 cm. Stratigraphy
also indicates thoroughly disturbed nature of
deposit. Negative results.

Shovel tests: All four were negative with stratigraphy as above.

Discussion and recommendations: This site has been completely eroded, and
its significance lost. There are no recommendations for mitigation or
protection from erosion.



21-CA-40

1 cm = 58.8 m
(4x USGS scale)

USGS Quad enlargement
centre S 1/2 Sec 21
T146 N R27 W
Little Winnibigoshish L. Quad

0 100 m

- x screened 50x50 cm test units, Area B
- o shovel tests, Area B
- Δ screened 50x50 cm test units, Area A
- shovel tests, Area A

21-CA-59: Dam Bay Site

Location: NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec 26 T146N R27W

Description: This site located on a level, 4 m high sand bank. Erosion is very severe. A buried soil horizon, 15 cm below the surface, is exposed in the vertical, cut bank. Artifacts and numerous flakes were recovered from the eroding bank. Testing indicates that a thin cultural deposit extends at least 20 m inland from the bank.

The site has been disturbed by the construction of summer homes. Vegetation is a paper birch-pine mix in a landscaped setting. Land is owned by Chippewa National Forest.

Cultural affiliation: Blackduck; Archaic (?); probably multicomponent.

Collections: University of Minnesota, 1976 survey.

U of M Accession No.: 801-19-(1-19)

Cultural Material:

Surface: The shallow water, beach and eroding bank yielded:

- 1 body sherd (grit/worn)
- 1 broken knife (slate)
- 1 large utilized flake (slate)
- 1 scraper (chert)
- 1 core (chert)
- 51 flakes
 - 19 chert-chalcedony
 - 13 basalt
 - 15 quartz
 - 4 quartzite
- 1 ground stone fragment
- several burned bone chips

Testing: Nine 50x50 cm test units were skim-shovelled and screened. Tests 1 through 6 were spaced along the bank edge 10 m apart. Tests 7 and 8 were placed 10 m inland from and staggered between the first units.

Test No. 9 was 10 m inland from test No. 8.

Tests No. 1 and 2 were excavated to 90 cm and 70 cm respectively. Both were sterile of cultural material.

Test No. 3 was excavated to 80 cm:

Stratigraphic profile: 0-5 root horizon, fine sand
5-15 dark fine soil with sand and charcoal
15-80 very fine buff sand

Cultural material: 12 cm charcoal concentration
36 cm chert flake, burned bone fragment
45 cm retouched flake (white quartz)
50 cm flake (quartz)
56 cm 2 flakes (slate)
58 cm flake

Test No. 4: profile same as No. 3

14 cm Blackduck rim sherd, 2 body sherds
20 cm 1 flake (slate)
35 cm 1 flake (agate)

Tests No. 5-7 and 9: All negative

Test No. 8: Stratigraphy 0-11 fine dark topsoil
11-50 very fine buff sand

Material: 23 cm flake (white quartz)
30 cm flake (clear quartz)
47 cm fragment of ground stone implement

Discussion and Recommendations: The site testing indicates a probable Blackduck component on and in the 15 cm buried soil horizon and lithic cultural materials below that horizon to a 50-60 cm depth below the surface.

The excellent natural and cultural stratigraphy is of potential significance. Cultural materials are not abundant but extend inland for 20 m. The severe erosion is rapidly destroying the site, and should be corrected through riprap. If this is not done, limited mitigation should take place very soon to salvage what data remain undisturbed.



Photo 7. 21-CA-59 Illustrating bank erosion at the site.



Photo 8. 21-CA-59 Typical water worn lithic flakes and sherd.

21-IC-4: Lake Winnibigoshish Dam Site

Location: S $\frac{1}{2}$ Sec 26 N $\frac{1}{2}$ Sec 35 T147N R27W and in the land areas of W $\frac{1}{2}$ Sec 25 T146N R27W

Description: A burial mound and habitation site located on high sand bank adjacent to Mississippi River outlet on Lake Winnibigoshish. The site is located on lands leased by U. S. Army Corps of Engineers from the BIA (Leech Lake band). The Corps of Engineers operate a dam at the outlet and have an associated complex of maintenance buildings, a public campground and a picnic area. These developed areas do not intrude upon the site which is located farther inland.

Vegetation cover on the site is deciduous hardwoods, primarily oak and basswood in the area of mounds 4 and 5 and mixed grass and brush in the area of mound 3 and the habitation area. Mounds 1 and 2 are in a grassy area kept cleared by Corps personnel. The original forest cover on this location was hardwood with scattered conifers.

Soils are sand with a very shallow A horizon but with at least three buried soil horizons located in the habitation zone and appearing is the upper one and a half meters of the surface. The area is one of dune formations whose active life coincided with the postglacial thermal maximum.

Three of the burial mounds are elongated, linear types, while two are circular, conical types. One linear mound and one circular mound are partially destroyed through severe erosion of the bank adjacent to the Mississippi River outlet channel. Thus erosion has also destroyed a portion of the habitation site. Significant portions of the habitation site remain; one-half of the circular mound No. 3 remains; and over 50 linear meters of the elongated mound No. 4 remains intact.

Cultural affiliation: Middle Prehistoric (?); Late Prehistoric (Blackduck).

Collections: University of Minnesota, 1976 survey; William Marshall.

Accession No.: University of Minnesota 800

Material:

Surface: Marshall has a large collection of lithic artifacts and ceramics from this site. No material was recovered by the University of Minnesota survey of 1976.

Testing: Nine 1x1 m test units were excavated in the habitation area. Locations are indicated on accompanying sketch map. All units were screened through $\frac{1}{4}$ inch mesh.

Testing:

Test No. 1: excavated to 110 cm.

Stratigraphy: 0-7 cm sod and root layer
7-22 dark, fine sandy soil
22-110 fine buff sand

Cultural material: 0-20 cm 1 rim sherd (Blackduck)
4 decorated sherds (Blackduck)
4 body sherds (cord/grit)
1 retouched flint (brown chalcidony)
2 burned bone fragments
20-30 cm 2 decorated sherds (Blackduck)
3 body sherds (cord/grit)

Test No. 2: excavated to 60 cm, then shovel tested in bottom to 140 cm.
Stratigraphy: same as Test No. 1.
Material recovered: 0-20 cm 1 bone fragment.

Test No. 3: was sterile of cultural material.

Test No. 4: soil stratigraphy same as above.
Material recovered: 30-40 cm 1 body sherd
2 eastern triangular points
6 retouched/utilized flakes
12 flakes
4 bone fragments

Test No. 5: soil stratigraphy same as above.
Material recovered: 30 cm and below:
1 rim sherd (Sandy Lake)
6 decorated sherds (cord wrapped stick/grit)
10 body sherds (5 cord/grit; 5 smooth/grit)
2 retouched flakes (quartz)
4 flakes (quartz)
1 beaver tooth
3 bone fragments

Test No. 6: excavated to 45 cm, then shovel tested in bottom centre to 75 cm.
Material recovered: 25 cm and below:
1 shoulder sherd (Blackduck)
1 body sherd
1 retouched flake (chert)
13 bone fragments

Test No. 7: excavated to 45 cm.
Soil stratigraphy: 0-5 sod
5-20 brown sand with gravel
20-30 black sandy soil
30-45 fine buff sand
Material recovered: 3 body sherds
1 flake (quartz)
1 historic square nail

Test No. 8: excavated to 35 cm with shovel test in bottom centre to 65 cm.
Soil stratigraphy: 0-20 cm dark fine sandy soil with charcoal flecks
20-65 cm fine buff sand
Materials recovered: 10-20 cm bits of shell and bone
20-30 cm 8 body sherds (cord/grit)
1 small chip (chert)

Test No. 9: excavated to 35 cm. Sterile of cultural material.

Discussion and Recommendations: The primary importance of the site lies in the burial mound complex. Data on excavated burial mounds in the north-western quarter of Minnesota indicate an early Laurel culture mound construction between 200 B.C. and 600 A.D. Successive phases include an

Arvilla complex localized in the grassland zone west of 21 IC 4 and dating between 600 and 900 A.D. followed by Blackduck and then Sandy Lake mound construction again distributed over the wider geographic area including 21 IC 4. In the Lake Winnibigoshish area, no data exist on burial practices during the Arvilla time span. As the Arvilla mounds are mostly linear and as Laurel, Blackduck and Sandy Lake are only circular, it is probable that the linear mounds at 21 IC 4 are related to Arvilla complex mounds, and as such, are significant in that they occur in an area where Arvilla complex sites are not known to occur. Added significance is the fact that the mounds most probably fall into the gap in time where burial practice data are unknown.

The habitation zone produced prehistoric cultural materials from each of the nine test pits and surface collections from the base of the eroding bank are extensive. The materials include ceramics, lithics, and some fragmentary faunal remains. Cultural affiliations include both Blackduck and Sandy Lake. It is probable that the habitation area post-dates the mound construction and the occupation may be associated with a specialized seasonal subsistence activity, probably spring fishing during the spawning season. The habitation area of the site is significant because known data on both Blackduck and Sandy Lake in most of northern Minnesota is limited to burial mound excavations and excavations of fall rice harvesting and threshing sites. Knowledge of seasonality and specialized subsistence practices is essential to determination of subsistence and settlement patterns. This small site thus seems of particular significance.

There is finally the possibility that excavations in the habitation zone extending into and through the buried paleosols may produce much earlier cultural materials associated with the postglacial thermal maximum time period. Locating such evidence in a naturally stratified situation would be of considerable importance to the definition of the very poorly known Archaic horizon of northern Minnesota.

The site needs both mitigation and erosion protection. Two of the mounds are already partially destroyed by the severe erosion; this also adversely affects the habitation zone. The significance of the site is clear and it has been recommended for nomination to the National Register of Historic Places.

LAKE WINNIBIGOSHISH

mound #5

mound #4

Hard woods

Cattail marsh

N

21-1C-4

0 20 100 meter

Scale: 1cm = 20 m

linear mound

conical mound

habitation zone

test units (9)

fence line

Mississippi River Outlet

1300 wide sand flat

mound #3

mound #2

mound #1

USE BM 477

NW corner of
Office and shops bldg.

Corps of
dam tender's house

Engineers headquarte



Photo 9. 21-IC-4 View of site from opposite shoreline.



Photo 10. 21-IC-4 View of eroding burial mound.



Photo 11. 21-IC-4 Sidenotch, triangular and expanded stem projectile points (Marshall collection).

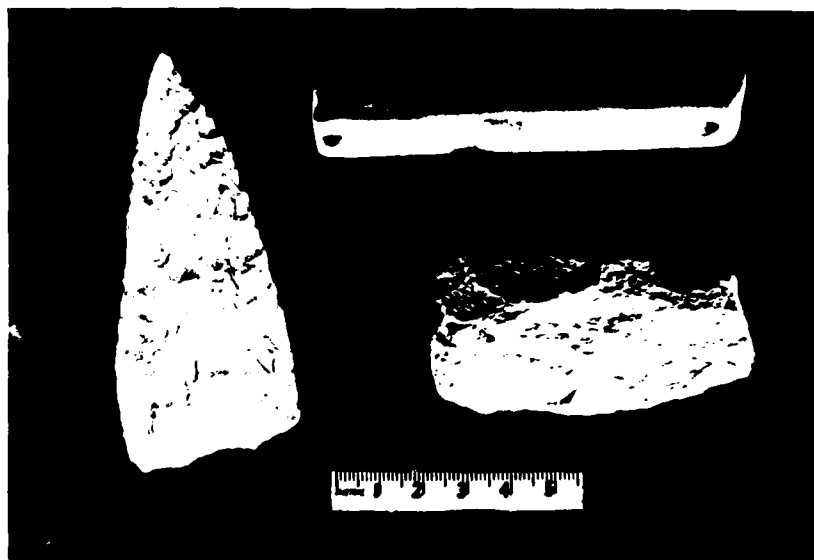


Photo 12. 21-IC-4 Flaked knives and ground stone atlatl weight (Marshall collection).

21-IC-18: Rayen's Point

Location: S $\frac{1}{2}$ Sec 18 T146N R28W

Description: This is a small island of high ground, formerly connected with the mainland as a peninsula and extending southeastward into Sec 17. Nearly the entire island contains evidence of cultural activity. The southeastern bay on the south side (designated Area A) contained a heavy concentration of lithic artifacts and flakes, and some sherds redeposited on a sand flat overgrown with rushes. In the northwest corner of the island near a small hunting cabin shown on the USGS quad, is a cluster of nine recent ricing pits (Area B). Inland, from the southeast tip, are possible raised gardens and graves. On the east facing shore a thin scatter of lithics was recovered from the shallow waters (Area C). Inland from this area is a cluster of 20 ricing pits (also probably recent). The vegetation, progressing inland from shore, is: cattail-rush swamp to willow-poplar thickets to elm-ash saplings to mature paper birch, maple, basswood.

Testing indicates that there are undisturbed cultural deposits remaining on the island at least 50 m inland from the water's edge.

Raven's Point is owned by the Chippewa National Forest.

Cultural affiliation: Late prehistoric and Historic Chippewa.

Collections: University of Minnesota, 1976; William Marshall.

U of M Accession No.: 801-11-(1-17)

Cultural Material: Surface: Marshall's collection includes numerous lithic artifacts and ceramics. Unfortunately he mixed the material collected here, with that from 21-IC-4 and thus it is not known what material came from which site.

University of Minnesota survey 1976 recovered material from the beach and shallows:

Area A: beach gravel

- 1 decorated sherd (cord wrapped stick)
- 1 body sherd
- 1 small projectile point (side notched)
- 1 gun flint (chert)
- 1 small scraper (brown chalcedony)
- 10 retouched/utilized flakes (4 chert, 2 quartzite, 2 chalcedony, 1 quartz, 1 jasper)
- 1 core (quartzite)
- 31 flakes
- 2 historic crockery sherds

Area C: shallows

- 1 preform (projectile point) pink chert
- 2 possible cores (chert)

Testing: Eight 50x50 cm units were excavated by skim shoveling. Soil was examined by hand. Refer to sketch map for location. Tests were also made of the ricing pits to determine cultural affiliation.

Test No. 1: Located in the possible terraced garden.

Stratigraphy: 0-7 cm sod
7-20 fine loam till
20-32 fine light brown till
32-40 bleached hardpan

Material: 11 cm 1 flake (chert)
13 1 flake (quartzite)
24 1 possible flake

Tests No. 2 and 3: Stratigraphy same as No. 1. Both sterile.

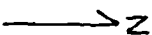
Test No. 4: Located in possible terraced garden. Stratigraphy same as No. 1.

Material: 10 cm historic square nail
12 agate flake
13 quartz flake

Tests No. 5-8: All sterile. No change in soil profile.

All shovel tests in ricing pits were sterile. Profiles of pit walls did not reveal a lining, nor anything that would suggest the pits were not recent. Backdirt of a foxhole near test No. 4 yielded two flakes.

Discussion and Recommendation: Survey and testing indicates that the major prehistoric portion of this site has been destroyed and that the scattered and very thin remnants would not warrant intensive testing. The lack of any prehistoric materials in or adjacent to the ricing pits, which are still visible as distinct surface depressions, confirms their recent construction. Historic site archaeologists would find the Ojibwa component important and intensive testing of this area of the site is recommended. The heavy cattail marsh surrounding most of the island acts as a protective buffer to prevent erosion of much of the shoreline so that mitigation because of this factor does not seem warranted.



Centre S $\frac{1}{2}$ Sec 18
T 146 N R 28 W
Raven Lake Quad

scale: 1 cm = 40 m
USGS enlargement

- X - 50x50 cm test units
- A - shovel test
- ⑫ - for burrow yielding 2 flakes



Photo 13. 21-IC-18 Shoreline vegetation, or why shoreline survey is often difficult.

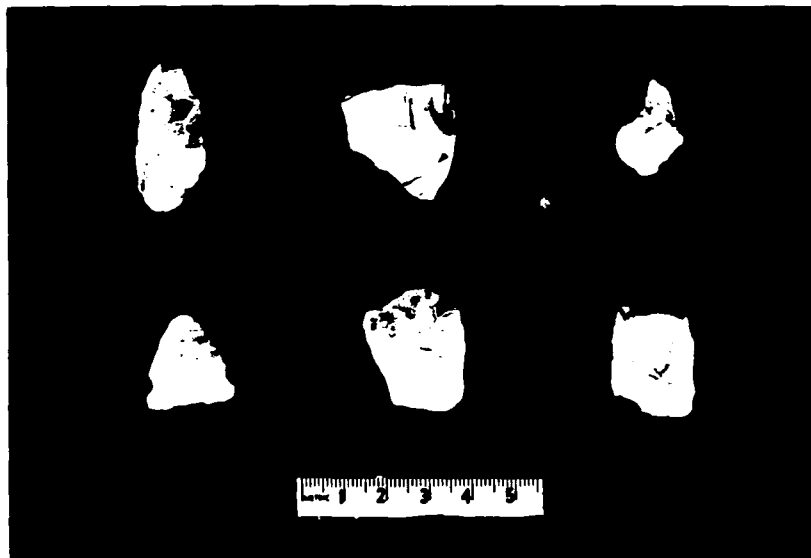


Photo 14. 21-IC-18 Lithic artifacts and debitage.

21-IC-19: Stony Point

Location: NW $\frac{1}{4}$ Sec 34 T147N R28W

Description: This site is located on extreme tip of a prominent point of land on the north shore of Lake Winnibigoshish. Large percussion flaked lithic artifacts, flakes and cores were recovered from the beach and shallows of the two small bays flanking either side of the point. Moderate to severe erosion is occurring along the 1 m high bank of glacial till. The 5-10 m wide sand beach is strewn with cobbles and boulders.

The interior of the peninsula is relatively level and is wooded with a mature northern hardwood community having a light, open shrub layer and a very dense ground cover of nettles and ferns.

Test units revealed a thin scatter of lithics across the point.

According to early post-dam shoreline maps of Lake Winnibigoshish, the western margin of the point was a historic Indian burial ground. This was not relocated by the survey and has presumably been destroyed by erosion. Informants have stated that ridges of cultivated fields were still visible ten years ago.

Located on Chippewa National Forest land.

Cultural affiliation: Multicomponent; probably Archaic; Historic Chippewa.

Collections: University of Minnesota survey, 1976.

U of M Accession No.: 801-10-(1-31)

Cultural Material: Surface: Reconnaissance of shallows, beach and interior of point recovered:

- upper bank: 1 utilized flake (quartzite)
- lower bank: 2 retouched flakes (chert, quartz)
- beach: 2 large chopping tools (chert)
- 16 large retouched flakes (chert and quartzite)
- 1 blade tool
- 3 cores (quartz, chert, quartzite)
- 10 flakes
- and several waterworn lithic pieces

Testing: Twelve 50x50 cm test units were closely spaced across the point.

Refer to accompanying sketch map for locations.

Test No. 1: Excavated to a depth of 95 cm. Soil checked by hand.

Stratigraphy: 0-15 sod and humus

15-25 mottled humus and grey sandy subsoil

25-50 fine sand/clay subsoil

50-95 light grey, fine clay soil

Scatter of charcoal flecks between 25-70 cm with a heavier concentration between 50-60 cm.

Material recovered: 15 cm small bone fragment

35 flake (slate?)

45 2 pieces fish bone

50 large bifacial discoid scraper (quartz)

55 2 flakes (quartz, basalt)

70 fish bone

A large chopping tool of quartzite was found on the ground surface near Test No. 1.

Test No. 2: Excavated to a depth of 55 cm where hard packed clayey till prevented deeper penetration. Stratigraphy is the same as No. 1. No cultural material was recovered. Some cracked rock was found between 20-25 cm.

Test No. 3: Excavated to a depth of 70 cm. Soil screened through $\frac{1}{2}$ inch mesh.

Stratigraphy: 0-10 sod and dark humus
10-44 dark, clayey, sandy soil
44-70 light coarse sand, no clay grading into increasingly bleached sand with small pebbles

Material: sod 1 bone fragment
30 cm 1 small core (material?)

Tests No. 4, 5, and 6: Excavated to a depth of 80, 85, and 40 cm respectively. Soil hand checked. Stratigraphy same as Test No. 3. No cultural material recovered.

Test No. 7: 50x100 cm test unit skim shoveled to a depth of 76 cm. Soil examined by hand. This unit was much disturbed by tree roots and an animal burrow.

Stratigraphy: 0-45 cm brown, fine sandy soil
45-76 hard packed bleached clayey loam

Material recovered: 20 cm quartzite core
35 retouched flake (quartz), 1 core (basalt)
36 1 flake (quartz)
38 1 flake (quartz)
40 1 possible flake (granite)
40-70 scattered rocks, some cracked with sharp edges and others rounded

Note: A large, possible core of quartz was found on the surface near Test No. 7.

Tests No. 8, 9, 10: Excavated to 70, 65, and 60 cm respectively. Soil examined by hand. Stratigraphy similar to Test No. 7. No cultural material was recovered.

Test No. 11: Excavated to a depth of 70 cm, soil examined by hand. Stratigraphy same as Test No. 7.

Material recovered: 30 cm 1 preform (?) (quartz)
50 1 amorphous nodule of very hard clay

Test No. 12: Excavated to 75 cm. Soil examined by hand. Essentially no change in stratigraphy from Tests 7-10. Sterile of cultural material.

Discussion and Recommendation: The absence of ceramics, the large percussion flaked cutting tools, and the slate, chert, and quartz debitage indicate an Archaic period site, but the absence of any diagnostic artifacts prohibits the closer placement culturally and temporally. The significant erosion and reduction in size of this prominent point during the post-dam era and the thin scatter of remains shown in the test pit indicates that the major portion of this site has been destroyed. Intensive testing of the remaining site area is recommended to locate diagnostic artifacts before the site is completely destroyed.

28

27

26

21-10-19 Stony Point
Sec 34 T 147 N R 28 W
Pigeon Dam Lake Quad

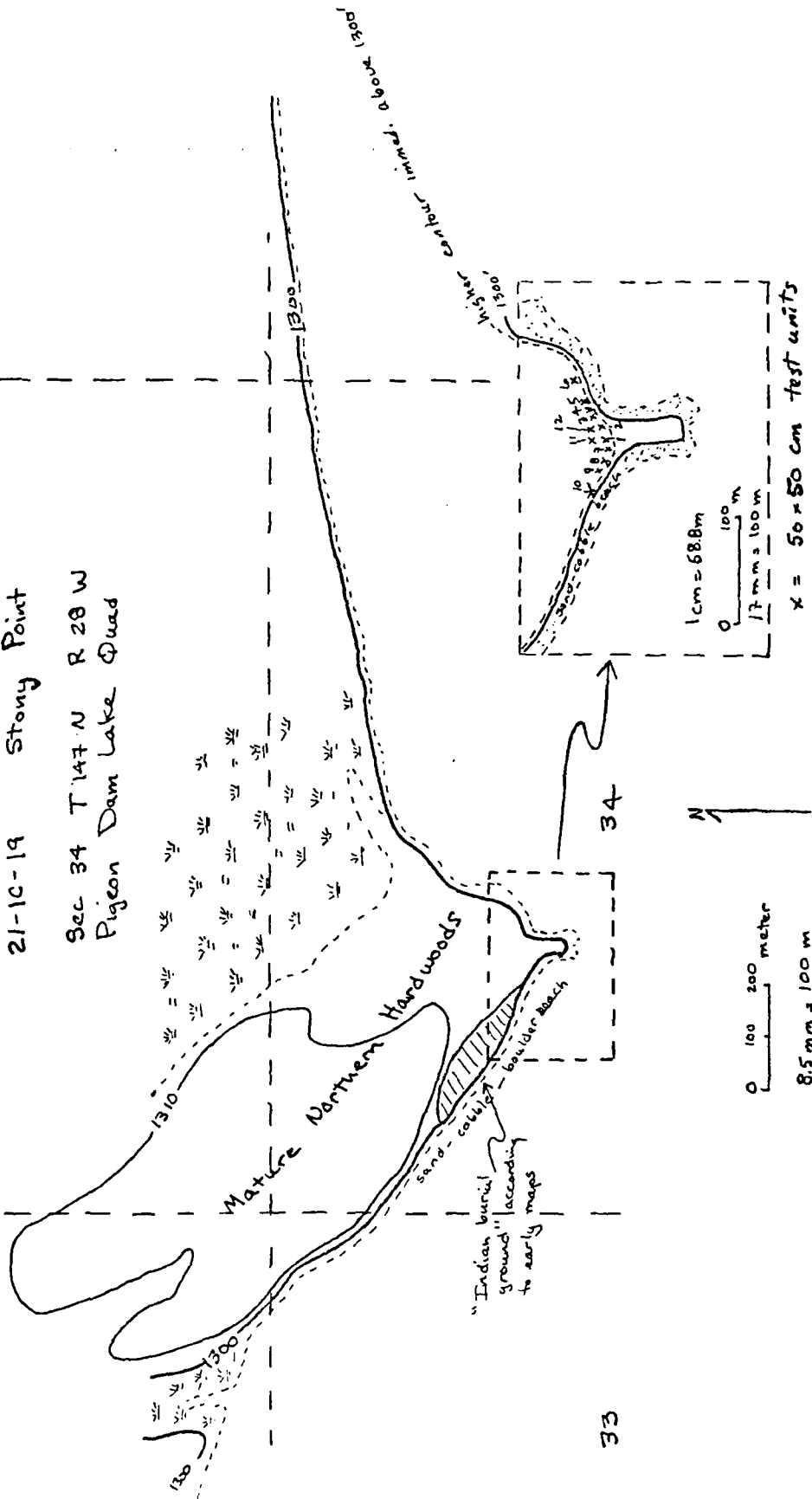




Photo 15. 21-IC-19 Bay on east side of point.



Photo 16. 21-IC-19 West shoreline.

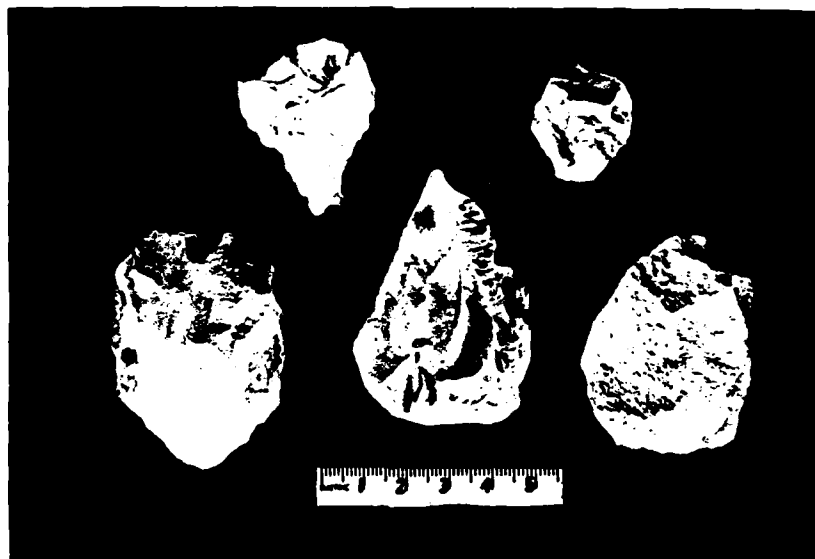


Photo 17. 21-IC-19 Large flaked knife, scraper and debitage.



Photo 18. 21-IC-19 Fish bone.

21-IC-21 Sugarbush Point

Location: NW $\frac{1}{4}$ Sec 3 T146N R27W

Description: Cultural material was recovered from the shallow water and sand beach beginning 100 m south of the north tip of the peninsula and continuing north and eastward around the tip to approximately 320 m south of the tip on the east side. The heaviest concentration of material was found in the shallows on the northeast side of the point.

The point is very low (contained within the 1300' contour), level and sandy. Except for the northernmost tip which consists of wide sand flats, the inland vegetation cover consists of mature deciduous trees with a shrub and weed understory. The sand flats are either completely open or covered with willow thickets. The bank on the west and north sides of the point is undergoing severe erosion, and the exposed sand flats below are unstable and shifting. On the eastern side of the point, the sand beach merges into a thick cattail fen.

In the centre of the peninsula, approximately 600 m south of the tip of the point, a sign posted atop a high knoll commemorates the site of an 18 C Hudson Bay Trading Post. Testing of this site proved negative and if there was a post there at one time, it has since eroded down the steep embankment without a trace.

The site is on land owned by the Chippewa National Forest.

Cultural affiliation: Unknown. Possibly Archaic, Old Copper.

Collections: E. F. Creech, Cass Lake; University of Minnesota 1976 survey.

of M Accession No.: 801-2-(1-12)

Cultural material: Surface: Creech reports lithic and copper finds from this site. The material was not available for observation.

The University of Minnesota 1976 survey of the beach and shallow water yielded:

From the W/NW shore: 1 scraper (jaspilite)
5 flakes (2 quartz, 1 quartzite, 2 chert)
1 possible core (quartz)
1 deer scapula
1 femur (mammal)

N shore: 1 scraper (quartz)
3 flakes (2 quartz, 1 chert)
All from the shallows

NE shore: 1 retouched flake (chert)
1 large, crude quartz biface
6 flakes (4 quartz, 1 quartzite, 1 chert)
1 mammal bone, silicified
1 historic china sherd

Testing: Eight 50x50 cm test units were excavated on the west and north shores of the point. All were sterile of cultural material.

Test No. 1: Taken down to 40 cm (water table).

Stratigraphy: 0-20 cm dark, sandy topsoil
20-40 wet, coarse sand

Tests 2, 5, 7 and 8: Taken down to 50 cm. Stratigraphy follows No. 1.

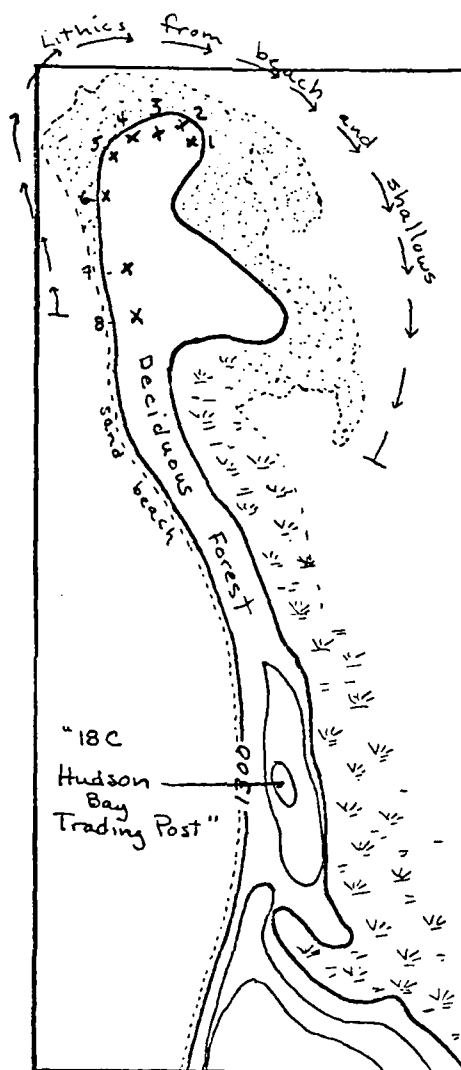
Test No. 3: Excavated down to 50 cm.
Stratigraphy: 0-5 cm dark sandy topsoil
5-55 light sand

Tests No. 4 and 6: Taken down to 55 cm and 65 cm respectively. Both profiles show buried soil horizons:

0-10 cm	dark sandy humus
10-25	light buff sand
25-35	dark sandy soil with roots
35-65	light, coarse sand

The area designated as the site of the Hudson Bay Trading Post was tested to obtain a stratigraphic profile and to recover any associated artifacts that may be present. A trench, 1 m deep, .5 m wide and 3.5 m long was excavated from the bank edge to the centre of the 80 cm high, square raised area. The soil profile showed no signs of disturbance of the natural stratigraphy. The only material recovered was numerous recent glass chips and rifle shells found just below the sod. There is no remaining evidence to indicate that a trading post existed at this site.

Discussion and Recommendations: The ascription of Hudson Bay fur post to the area designated is incorrect and if there was such a post at this location (highly improbable) it has been destroyed. The prehistoric component of the site is underwater and probably destroyed. No evidence of any site remnants were discovered on the upland areas.



211C21 Sugarbush Point
 Sec.3, T146N, R29W.
 Little Winnibigoshish Lake Quad.
 Approximate scale: 1cm : 60m



Photo 19. 21-IC-21 Sugarbush point--east side.



Photo 20. 21-IC-21 "Hudson Bay post" inaccurate sign.

21-IC-22: Seelye Point

Location: W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec 22 and E $\frac{1}{2}$ SE $\frac{1}{4}$ Sec 22 T147N R27W

Description: Cultural material has been collected from both the west and east bays flanking Seelye Point, a high, narrow southward-projecting esker in Cut Foot Sioux Lake. The steep slopes are wooded, minimizing erosion except near the base of the slopes where erosion is mild to moderate. At the apex of the point, erosion is markedly severe.

A cobble-boulder beach borders the peninsula, interrupted occasionally by small, open-sand bays. The top of the point is relatively level and has a mature mixed conifer-hardwood cover. A picnic shelter has been developed on top of the point near the apex.

The site on the east side has been completely destroyed by the high water level and a campground development. The paucity of cultural material recovered on the surface reconnaissance on the west side suggests that this portion of the site may be under water as well.

The site is on land owned by Chippewa National Forest.

Cultural Affiliation: Middle and Late prehistoric

Collections: E. F. Creech, Cass Lake; University of Minnesota.

University of Minnesota Accession No.: 801-9-(1-10). Temporary No. IC-22-1 → 119 (Creech collection).

Cultural Material: Surface: Creech has a large collection of material from both the sides of the point, but primarily from the east bay. This collection includes:

- 348 rim sherds
- 331 Blackduck
- 3 Sandy Lake
- 14 unidentified (9 of these are split)
- 319 decorated sherds
- 3170 body sherds
- 2621 cord/grit
- 155 net/fabric/grit
- 66 smooth/grit
- 37 cord/shell
- 1 smooth/shell
- 128 grit/surface treatment indiscernible
- 109 lithic artifacts
- 120 modified flakes
- 131 unmodified flakes
- 131 pieces worked bone

Surface survey of shallows, beach, and bank was conducted twice on the east bay and once along the west side.

Material recovered:

- bank, west side: 1 possible hammerstone
- 1 quartz flake
- shallows, west side: 2 flakes (quartz, chert)
- shallows, east side: (August 1976) 2 flakes (quartz, chert)
- 1 possible flake (quartz)

shallows, east side: (October 1976) 1 retouched quartz flake
1 possible chalcedony flake

Testing: Shovel tests (all sterile) were placed in the least disturbed areas of the campground in E. Seelye Bay. Stratigraphic profile:
0-10 black, heavy humus
10-70 brown coarse sand with cobbles

Discussion and Recommendations: This site has been inundated by the raised water levels and has no potential for excavation.



Photo 21. 21-IC-22 Seelye Point toward north.



Photo 22. 21-IC-22 Campground built on site.



Photo 23. 21-IC-22 Late prehistoric projectile points, end scrapers, and knife (Creech collection).

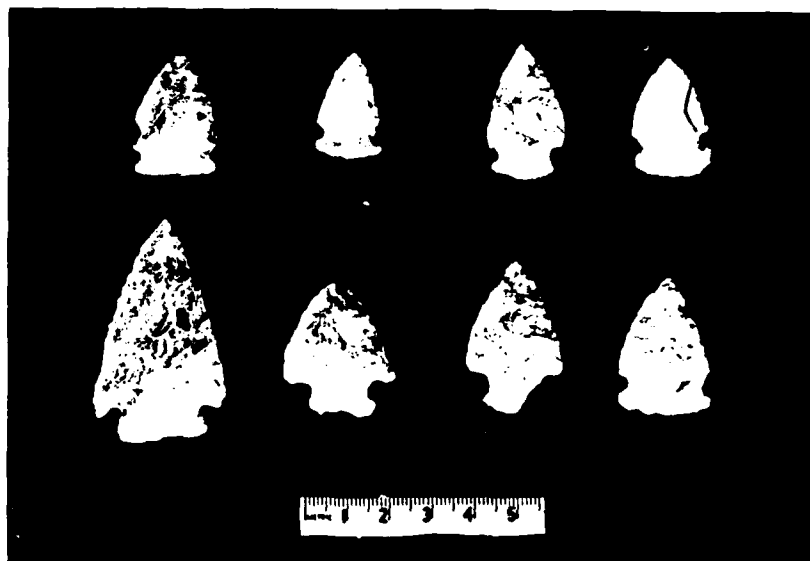


Photo 24. 21-IC-22 Middle prehistoric projectile points (Creech collection).

21-IC-23: Williams Narrows

Location: North peninsula SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec 26 T147N R27W
South peninsula NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 35 T147N R27W

Description: The site exists on two peninsulas separated by a narrow channel which connects Little Cut Foot Sioux Lake to Cut Foot Sioux Lake. Early maps indicate that this was once a continuous strip of land severed by the channel when the water level was raised by the dam.

North peninsula: The site comprises the southern third of the peninsula north of the channel. This is a relatively level area (mostly contained within the 1300' contour). Vegetation is a mature conifer-hardwood mix. The sandy peninsula has undergone considerable erosion and cultural material is found scattered in the shallow water, on the beach, and coming out of the sand bank. Testing in the interior has shown that undisturbed cultural deposits exist across the peninsula. Dense vegetation prohibited detailed examination of surface irregularities in the interior, which may be the result of past human activities.

South peninsula: The site also comprises the northernmost 250 m of the south peninsula. The entire area is a resort development owned by Louis and Betty Karau who have an extensive collection from the area. The 1-2 m high sand bank is subject to severe and rapid erosion, particularly on the west side. The Karaus estimate that they have lost 20' of their west bank over the past ten years. Testing of this peninsula showed deeply buried cultural deposits in areas as yet undisturbed by resort development.

The site is located on land owned by the Chippewa National Forest.

Cultural Affiliation: Multicomponent; Early Prehistoric through Middle Historic.

Collections: Louis and Betty Karau, Williams Narrows, University of Minnesota 1976 survey; Chippewa National Forest (Harrison survey).

U of M Accession No.: 801-4-(1-95).

Cultural material:

1. Surface--North peninsula

Shoreline survey:

West half of peninsula (July 1976):

Bank: 2 grit tempered, cord impressed body sherds

1 quartz flake

Shallows and beach:

23 grit tempered sherds

2 rimsherds (Laurel and Blackduck)

1 shoulder/rim with deep cord wrapped stick impressions (Blackduck)

1 incised sherd (probably Laurel)

19 body sherds (1 possibly net-impressed, 2 smooth cord-impressed, 13 cord/cord wrapped paddle, 3 smooth)

1 leaf-shaped projectile point (jasper, partly damaged)

1 utilized chert flake

1 chert core

38 flakes (20 quartz, 6 chert, 2 greywacke, 7 quartzite, 3 undetermined)

West half of peninsula (October 1976):

Dry sand beach:

- 1 core/chopping tool (granular tan chert)
- 1 utilized flake (grey/brown chalcedony)
- 1 quartz flake

Wet sand beach:

- 13 grit tempered sherds
 - 2 rimsherds decorated with cord wrapped stick and punctates (Blackduck)
 - 2 cord wrapped stick impressed sherds (Blackduck)
 - 1 smooth surface, incised sherd (Laurel)
 - 7 cord wrapped paddle treated sherds
 - 1 smoothed over cord impressed sherd (possibly Sandy Lake)
- 1 side-notched projectile point (2.7 cm long, whitish chert)
- 1 lanceolate point with slightly concave base, tip broken remaining length, possibly 2/3, 3.8 cm (grey chert)
- 1 pointed and retouched slate flake, possibly a drill
- 1 discoidal cutting tool (tan quartzite)
- 1 broken preform (whitish chert)
- 11 flakes (4 fine grained chert, 3 granular chert, 4 quartz, 1 greywacke)

Shallows:

- 17 grit tempered sherds
 - 5 rimsherds decorated with cord wrapped stick, 2 also with punctates (Blackduck)
 - 1 cord wrapped stick decorated sherd
- 10 cord impressed sherds
 - 1 combed sherd (Blackduck)
- 1 chopping tool (granular chert)
- 1 cutting tool (quartz)
- 1 chert knife
- 1 utilized slate blade
- 1 retouched artifact, fragmentary (Knife River Flint)
- 1 part of broken ground stone objects (greenstone)
- 1 chert core
- 9 flakes (5 quartz, 3 granular chert, 1 possibly Montana moss agate)

East half of peninsula, narrow beach between channel of river and 1-2m high sandbank, checked as far as approximately 10 m north of southeast corner, where marsh vegetation became too thick to permit further surface checking.

Wet sand and shallows:

- 4 grit tempered sherds (2 cord impressed, 2 split)
- 1 miniature scraper (brown chalcedony)
- 1 cortical quartz flake

Transect No. 1, due east of center of south shore; trowelled from edge of beach north to bank:

- soil stratigraphy (uniform to bank where disturbed by roots):
 - 0-2 cm tan, coarse sand
 - 2-3.5 dark silt layer
 - 3.5-4.5 tan sand
 - 4.5-10 and continuing blue clay

A pattern of dark, black intrusions was found penetrating 6-8 cm deep into the grey clay--could possibly be the postmolds of some structure.

- 19 grit tempered sherds
 - 2 rimsherds decorated with cord wrapped stick (Blackduck)
 - 1 near-rim sherd with partial punctate
 - 3 net impressed body sherds
- 33 cord impressed body sherds
 - 1 gunflint ("honeybee flint")
 - 1 end scraper (white chert)
 - 1 fragmentary scraper or cutting tool (grey chert)
- 31 flakes (12 quartz, 6 quartzite, 1 jasper, 2 brown chalcedony, 3 greywacke, 6 chert, 1 basalt, 2 felsites)
 - 1 ground maul with side notches
 - 1 ground, ovoid hammerstone/chopper
 - 1 possible hammer/grinding stone

Collected from bank, approximately 4 m northwest of Transect No. 1:

- 1 grit tempered, cord impressed body sherd
- 1 quartzite flake

Transect No. 2, 2 m east of No. 1, trowelled from the wet sand north into bank and down to sterile clay:

Soil stratigraphy 1 m south of bank:

- 0-6 cm white beach sand
- 6-11 dark, clayey, organic/sandy soil
- 11-14 coarser, light beach sand
- 14 and on grey/blue sterile clay

Soil stratigraphy of bank:

- 0-15 cm sandy humus
- 15-30 whitish coarse sand similar to third layer in beach stratigraphy
- 30-60 dark, clayey, organic, sandy deposit similar to layer two in beach stratigraphy
- 60 and on grey/blue clay

Appears to be a "reversed" stratigraphy that suggests intermittent erosion and redeposition from bank onto beach.

Cultural material, although concentrated to between 0.5 and 1-5 m south of bank, did continue to show up right into bank, suggesting that a cultural deposit is still intact from bank north into the interior of the peninsula.

- 18 grit tempered sherds
- 16 cord impressed, 2 unidentifiable
- 1 scraper (jasper)
- 1 knife (moss agate)
- 1 miniature scraper (chalcedony)
- 1 quartz core
- 1 worked quartz flake
- 10 flakes (4 quartz, 2 chert, 3 greywacks, 1 basalt)

Previous surface finds:

According to the Karau family at Williams Narrows, such finds have been frequent. Many are now included in their private collection. This collection includes:

- 61 rim sherds
 - 51 Blackduck
 - 3 Sandy Lake
 - 1 Brainerd ware
 - 5 St. Croix
 - 1 unclassified

- 9 decorated sherds
- 18 body sherds
 - 1 stamped
 - 2 net impressed
 - 5 shell tempered/cord impressed
 - 10 grit tempered/cord impressed
- 126 lithic artifacts
- 4 copper artifacts
- 10 large, ground stone implements
- 1 atlatl weight

Testing: Five shovel tests were excavated in August 1976, each roughly 50x50 cm square and 1 m deep. See accompanying map of north peninsula for location of tests.

Test No. 1: 0-5 cm roots and sod

5-20 sandy humus

20 and on grey, clayey subsoil

Material: 5-20 cm 2 grit tempered, cord impressed sherds
1 flake (brown chert)

Test No. 2: Soil profile same as No. 1.

Material: 5-20 cm 6 grit tempered, cord impressed sherds
1 bone fragment
some charcoal

Test No. 3: 0-80 cm sandy, clayey humus

80 and on sandy subsoil--sterile

Material: 2 quartz flakes
charcoal and cracked (fire cracked?) rocks

Test No. 4: 0-15 cm sandy humus on south wall; below sandy subsoil

0-80 sandy humus on north wall; below sandy subsoil

Profile on west wall shows abrupt incline in humus/subsoil horizon between 15 and 80 cm.

Material: 1 chert flake found at approximately 60 cm.

Test No. 5: 0-15 cm sandy humus--sterile

15 cm and on sandy subsoil--sterile

Two more shovel tests, #31 and 32, were excavated 30 and 60 m respectively each of No. 5; both proved sterile.

2. Surface--South peninsula (University of Minnesota, July 1976)

Shoreline survey of beach and shallows of west and north shore only.

Shallows, wet sand and beach:

1 scraper (chert)

1 projectile point preform (chert)

1 possible area (quartzite)

1 retouched utilized chert flake

29 flakes (13 quartz, 11 chert, 1 quartzite, 1 brown chalcedony,
1 agate, 1 jasper, 1 unknown).

Summary: Fourteen test units, 50x50 cm square (unless otherwise indicated) were excavated along the west side of the south peninsula. Betty Karau reported that she used to collect artifacts from the central area of the upper portion of the peninsula. Since finds were reported from all over

this peninsula, testing was confined to the west side and it was assumed that cultural material was present in the central and eastern portion as well.

All tests were excavated by University of Minnesota survey crew. Locations are indicated on accompanying sketch map.

Test No. 1: Excavated to 98 cm. Soil screened through $\frac{1}{4}$ inch mesh.
0-19 cm topsoil with at least three buried sod horizons
19-28 bleached topsoil
28-64 orange-yellow sand with a gravel lens at approximately 33 cm.
64-98 rust colored redeposition horizon in grey wet sand
No cultural material was recovered.

Test No. 2: 0-10 cm sod and humus
10-25 tan sandy loam
25-35 lens with charcoal
35-110 buff sand
110-120 wood above grey sand
Materials recovered were: 2 copper cinders
2 historic square nails

Test No. 3: Excavated to 120 cm.
0-5 cm sod
5-10 buff sand
10-15 black humus
15-120 uniform buff sand
Material recovered: (depths not recorded)
1 large ovate knife (chert) (from below 100 cm)
2 flakes (quartz, chert)

Tests 1-3 were located in an area that had been filled sometime earlier this century.

Test No. 4: Excavated to a depth of 110 cm.
0-5 cm sod
5-20 black humus
20-110 uniform buff sand
Material recovered (depths not recorded): 2 flakes (chert, basalt)

Test No. 5: Excavated to 60 cm.
0-15 cm sandy humus
15-25 mottled sandy humus and light subsoil
25-60 buff sand
Materials recovered: 3 bone fragments found just under sod.

Test No. 6: Excavated to 50 cm.
0-10 cm light sandy topsoil
10-22 buff fine sand
22-30 dark sandy soil
30-50 buff fine sand
Sterile.

Test No. 7: Excavated to . cm.

0-13 cm light sandy topsoil
13-76 Buff fine sand with occasional rocks
76-83 lighter, coarser sand with water worn pebbles
Material recovered: 28 cm 1 quartz flake
40 1 quartzite flake
63 retouched/utilized flake
65 1 chert flake, retouched quartzite flake
70 wood
76 burned bone chip

Test No. 8: Excavated to 90 cm.
0-10 cm sod
10-35 mottled dark sandy humus
35-90 buff sand

Sterile.

Test No. 9: Excavated to a depth of 122 cm.
Stratigraphy like No. 7.
Material recovered: 10 cm historic glass bottle
36 chert flake
65 lanceolate point with parallel flaking,
oolitic black chert
75 2 body sherds, grit, twisted cord
(Position suspect. Perhaps careless
excavation knocked sherds from wall
from higher position.)

Test No. 10: Excavated to 65 cm.
Stratigraphy like No. 8.
Sterile.

Test No. 11: 75x75 cm square, taken down to 60 cm.
0-10 cm sod and humus
10-30 clay lens in mottled matrix
30-40 grey loamy sand
40-60 same, with rust stains
Material recovered: 0-10 cm 1 quartz flake
10-20 2 flakes (chert)
20-50 1 flake (chert)
3 bone fragments (burned)

Test No. 12: 0-10 cm sod and humus
10-12 mottled humus
12-25 sand
25-30 sand with gravel (old beach?)
30-50 hard packed clay with sand
50-65 grey-blue clay and sand
Material recovered: 10-25 cm 1 possible flake
25-30 6 flakes (2 quartz, 4 chert)
3 bone fragments (1 burned)
2 shell fragments and 1 fish vertebra

Test No. 13: 0-10 cm sod and humus

10-40 light sand

40-50 dark humus

50-80 clayey sand

80-110 grey-blue clay and sand

Material recovered: 0-15 cm 1 brown chalcedony flake

1 large flake of igneous rock

1 piece rusted iron

40-50 buried sod horizon with concentration
of charred and decayed wood and a number
of cracked rocks

10 flakes (7 quartz, 1 quartzite, 1 chert,
1 basalt)

1 possible fragment of ground stone

5 bone fragments and 1 fish vertebra
(charcoal sample taken from this level)

50-70 6 flakes (4 quartz, 2 unidentified)

5 burned bone fragments

70-75 2 flakes (1 quartz, 1 chert)

several minute burned bone chips and 1
fish vertebra

charcoal sample

Test No. 14: Excavated to 66 cm. Then taken down by shovel test to
110 cm (water level)

0-7 cm brown loam with sand

7-10 light, fine sand

10-18 dark black soil with sand

18-23 light sand

23-24.5 black, charcoal lens

24.5-80 brown wet sand with occasional rocks and charcoal
dark organic lenses indicating flooding at 48.5 and 55 cm.

80-110 light, fine sand with occasional silt varve

blue clay lens at bottom

Material recovered:

24.5-80 cm: 10 flakes { 29 cm 3 flakes (2 quartz, 1 quartzite)
33 3 flakes (1 quartz, chert, quartzite)
36 1 flake (white quartz)
40 1 flake (white quartz)
55 1 flake (red quartzite)
63 1 flake (granular?)

1 grinding stone

20 chips of worked bone (scattered between 30 and 65 cm)

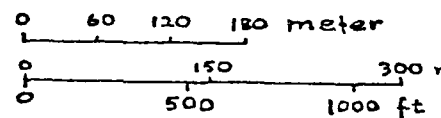
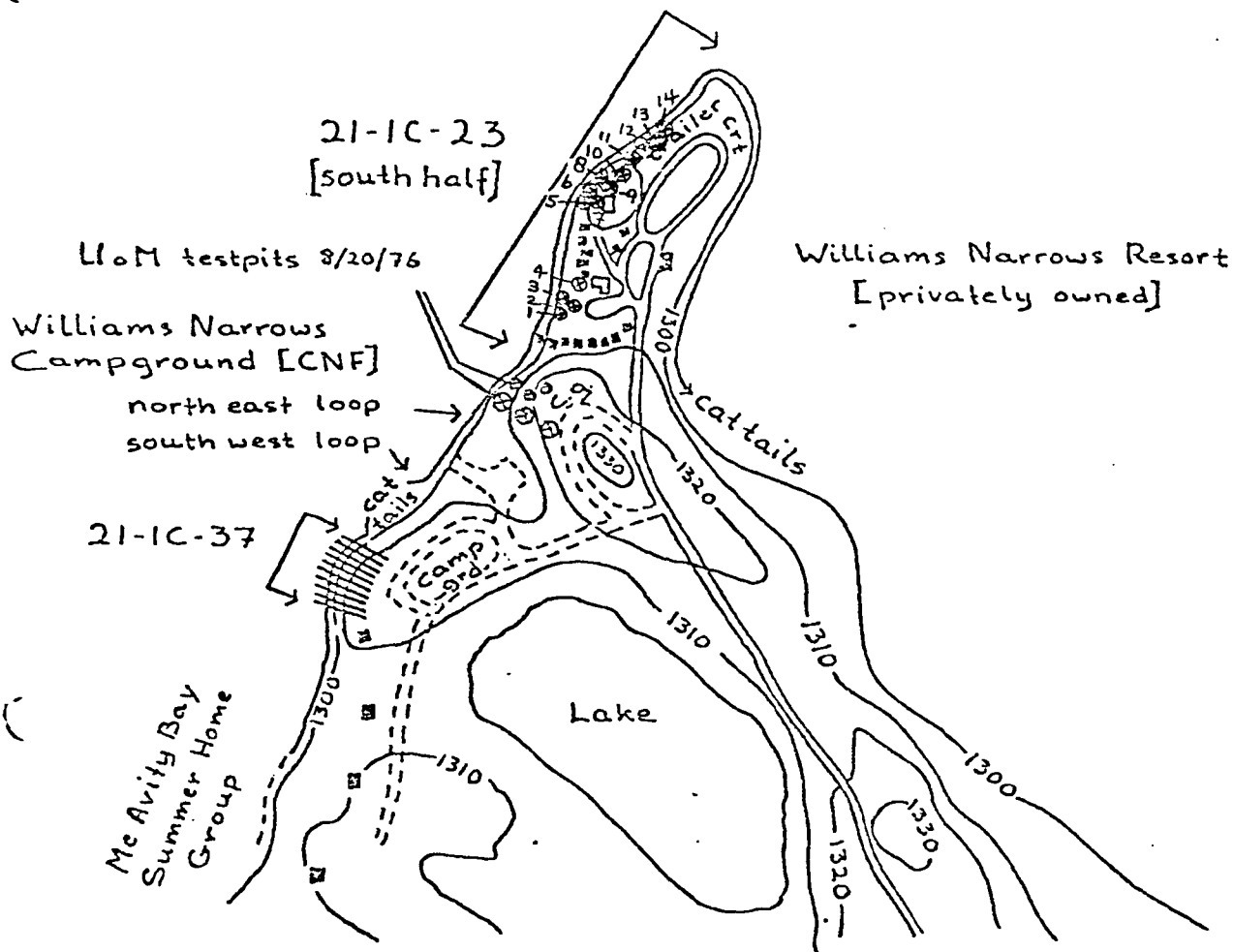
6 burned bone fragments

1 wire coil - historic whisker remover

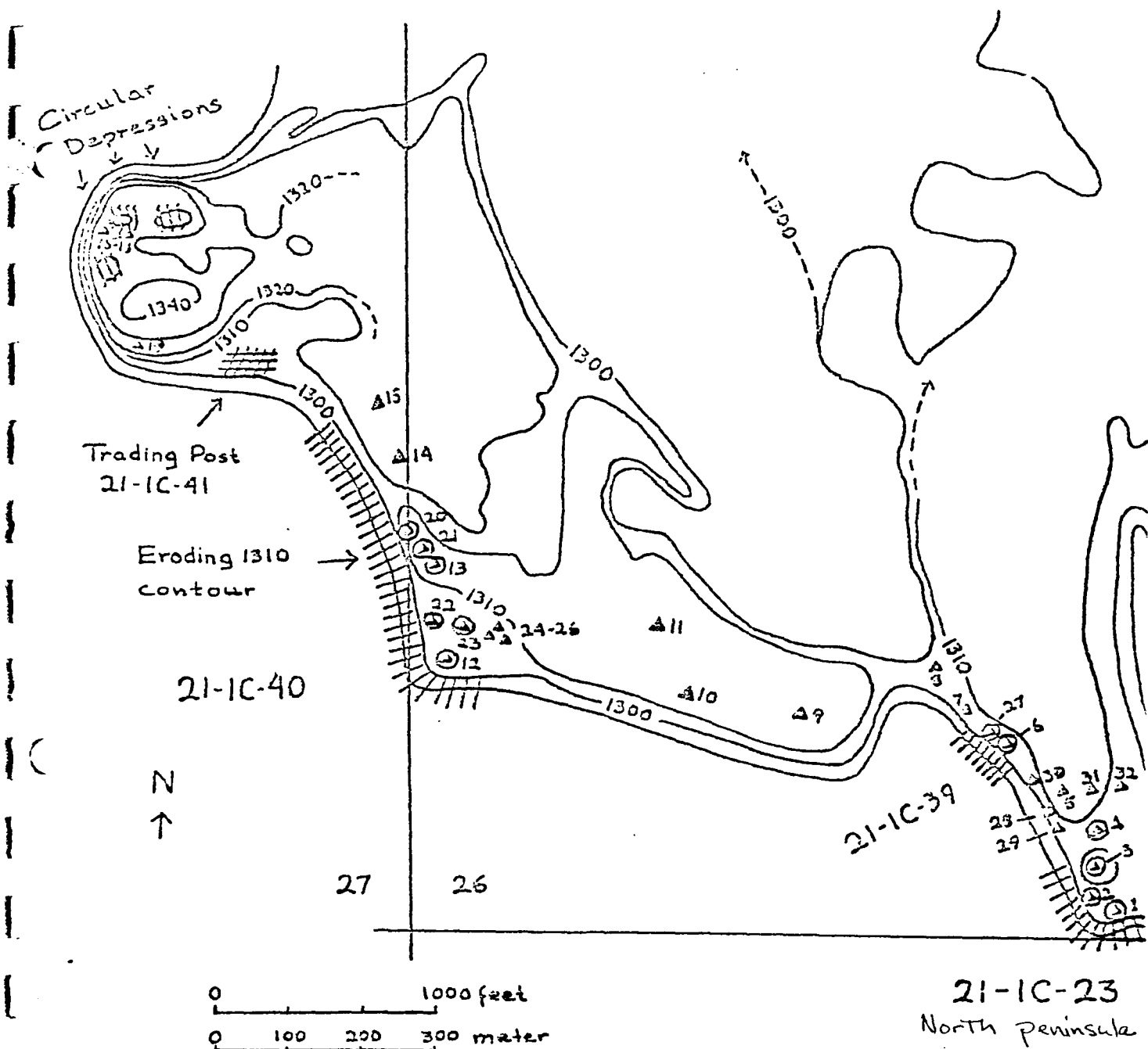
1 small metal hook

Six shovel tests were placed on the bank above the swimming area,
immediately south of the resort. It was reported that material had been
found here. All six were sterile. Stratigraphic profiles indicated
disturbance from slumping of bank due to undercutting erosion. (See map
of south peninsula 21-10-23 for location of these tests.)

Discussion and Recommendations: This is probably the most extensive and important of the sites located and tested on this survey. Test pits produced an Early prehistoric period Plano point at a depth of 65 cm; the Karau collection includes an Eastern fluted point from the same vicinity; copper artifacts of the late Archaic are present; and the Woodland horizons are well represented. As a stratified site, largely undisturbed, and covering a long range in time, it may be the most significant archaeological site in the northern half of Minnesota. The north section of the site is eroding through water action; the south section is also eroding, and apparently at a faster rate. It is recommended that both sections of the site receive intensive testing to determine more clearly the extent and nature of the site and its significance. It is also recommended that immediate measures be taken to eliminate the erosion, and if that is not possible, that site mitigation be arranged as soon as possible. It would be tragic if this site is destroyed through failure to correct the erosion, or if the site is destroyed before mitigation takes place. The need here is urgent.



- Legend:
- residential building
 - summer home
 - cabin
 - test pits excavated by University of Minnesota crew 8/20/76
 - //// area that has yielded cultural material



Elevation contours higher than 1310 have been indicated only in areas of particular archaeological significance.

|||| = indicates the extent of the site as indicated by shore finds.

Δ = shoveltests [#1-15 by University of Minnesota Survey for the Army Corps of Engineers, 8/11/1976; #16-32 by C.Harrison 11/9-11/1976].

⊙ = indicates those shoveltests which yielded cultural material.

|||| = groups of circular depressions.

= house foundations



Photo 25. 21-IC-23 Early prehistoric projectile points. Lower row, second from left, from test pit; others Karau collection.



Photo 26. 21-IC-23 Early prehistoric copper knives and socketed projectile point; stone tubular pipe (Karau collection).

21-IC-24: Little Cut Foot Sioux Lake

Location: SE $\frac{1}{4}$ Sec 25 and NE $\frac{1}{4}$ Sec 36 T147N R27W

Description: The site comprises the shoreline and adjoining inland of the southern half of the area that is now the Chippewa National Forest O-ne-gum-e Campground. Surface finds of eroded cultural material have been located on the beach and in the shallows; shovel testing located undisturbed cultural deposits inland on the low level terrace that is contained within the 1300 foot contour. There seemed to be no surface irregularities that could be indicative of past human activities. The soil is uniformly sandy with a relatively thin sod/humus layer; the predominant vegetation is, at present, cattails and willows close to shore, then young deciduous trees (birch, aspen, some oak) between the 1300 foot contour and the rising uplands to the west, where red pine becomes dominant. Natural vegetation is interspersed with openings that have been graded into pads and access spurs for campsites.

Cultural Affiliation: The material recovered at this site ranges in age from Late Archaic (Old Copper) through Middle prehistoric and Late prehistoric (Blackduck Ware, possibly also Sandy Lake Ware). This suggests a series of occupations, presumably temporary habitation sites, on this spot, which is strategically located west and south of the deep channel of the First River Flowage. This location means that it would have been close to shore even before the rise in lake level and also close to the end of several important portage trails leading to other lake and river systems to the north and northeast.

Surface collection owners: E. F. Creech, Cass Lake; University of Minnesota; Chippewa National Forest.

U of M Accession No.: 801-8; and temporary number IC-24-1 through 23 (Creech collection).

Cultural Material: Surface: Creech reports that his collection from this site came mainly from a small rocky beach opening in the cattail-lined shore, just south of the boat launch. He found pottery scattered along the east shore. His collection includes:

- 3 rim sherds (Blackduck)
- 3 decorated sherds
- 32 body sherds
- 3 net impressed
- 6 cord impressed/shell temper
- 21 cord impressed/grit temper
- 2 smooth/grit temper
- 1 side and basal notched point, white chert
- 15 lithic artifacts
- 33 modified flakes
- 40 unmodified flakes
- 1 copper knife (crescent)

U of M surface survey of beach and shallow water (August 1976) recovered:

- 1 cord marked sherd, shell tempered
- 2 grit tempered, cord marked sherds (probably Blackduck)
- 1 grit tempered, smooth surfaced sherd (possibly Laurel)

The surface survey began at the southeast tip of the 1300 foot contour north of the bilobed marsh (approximately 210 m south/southeast of the 25/36 section line) and continued north. The first 154 m stretch of beach yielded no cultural evidence and ended in a stand of cattails. North of this stand, the sand beach was again exposed and began to yield artifacts. This was to continue north for 225 m and this stretch was therefore divided into 25 m sections in order to gain control of find density and distribution.

- 0-25 m
 - 2 grit tempered sherds, one with cord markings
 - 1 quartzite flake with partial retouch
 - 5 flakes (2 whitish chert, 1 grey, granular chert, 1 white/orange chert, 1 white quartzite)
 - 6 flakes of greenstone, 2 of them with smoothed surfaces that appear ground and possibly are the fragments of a ground artifact
- 25-50 m
 - 1 shell tempered, cord marked rimsherd with a lip that has been "pinched" and impressed with a stick on the inside (Sandy Lake)
 - 1 grit tempered, net impressed body sherd (Blackduck?)
 - 4 grit tempered, cord marked body sherds
 - 1 quartz flake
 - 1 cortical flake of greenstone with three ground "facets"
 - 1 flat, 2 convex--fragmentary, ground artifact?
- 50-75 m
 - among the gravel rich sands at the western edge of the "wet" sand beach, between the 58th and 67th meter, approximately 5 m from the water and 4 m from the 1300 foot contour, due east of camping pad #12:
 - 10 grit tempered sherds
 - 1 fragmentary rim with oblique cord wrapped stick impressions across the lip (Blackduck)
 - 9 cord marked body sherds
 - 3 smooth surfaced sherds (Laurel?)
 - 1 shell tempered sherd with cord markings (Sandy Lake)
 - 8 split body sherds, 2 of them shell tempered
 - 3 flakes (2 quartz, 1 grey, granular chert)
- 75-100 and 100-125 m negative
- 125-150 m from the dry sand, 2 grit tempered, cord marked sherds
- 150-175 m from the dry sand, 1 small retouch flake
- 175-200 m from the dry sand, 1 grit tempered, smooth body sherd
- 200-225 m negative

Most of the material found came from the 0-75 m stretch, with a particular concentration around 58-67 m. Most of it was also found either at the inner edge of the "wet" sand beach or in the dry sand below the 1300 foot bank, which seems to suggest that material still is coming out of the eroding bank. This was confirmed by testing inland, see below.

North of the 225 m stretch, the beach gradually becomes covered with cattails except at the spots where boat access is provided for the

campsites inland. Spot checks amongst the cattails and in the shallows yielded nothing. Finds were made only at the boat landing for campsite No. 33, on the hard packed wet sand: 4 flakes (2 quartz, 1 white chert, 1 grey, granular chert).

Testing: Five units were excavated, all of them 50 cm square; soil was screened through $\frac{1}{4}$ inch mesh. See accompanying map for location.

Test No. 1: 0-16 cm humus
16-70 cm tan/orange sand
70-90 cm bleached, rust stained sandy soil

15-40 cm 2 grit tempered, combed body sherds
40-50 cm 1 grit tempered, combed body sherds (all same type)

Test No. 2: Stratigraphy similar to No. 1 but water logged from 70 cm on. Negative.

A shovel test approximately 8 m southeast of test pit No. 2 showed similar stratigraphy--was also sterile.

Test No. 3: 0-15 cm humus
15-60 cm brownish/tan sandy subsoil
60-90 cm bleached sandy subsoil

0-15 cm 27 sherds of uniform character, probably from the same vessel, with hard to define temper, possibly fine shell, and with criss-crossing cord markings (not cord wrapped paddle)
15-25 cm 3 sherds of same type as above
9 sherds and 4 "crumbs" of a different, grit tempered and poorly fired; all sherds are split and surface treatment unknown;
1 piece of cracked basalt
25-30 cm 1 grey chert flake
1 fragmentary rock with two flat--concave ground surfaces--possibly a broken artifact

Test No. 4: 0-15 cm humus
15-60 cm brownish/tan sandy subsoil
60-80 cm increasingly bleached subsoil

Sterile.

A shovel test approximately 17 m further west also proved negative.

Test No. 5: 0-15 cm humus
15-80 cm tan, fine sandy subsoil

15-30 cm a number of cracked (fire cracked?) rocks but no other evidence of possible cultural material

Several shovel tests inland from test units No. 1 and 3 were all negative.

Summary of site content: Although cultural material is predominantly Late prehistoric, the copper finds made here by Creech suggest a Late Archaic component as well, although no evidence found on this survey dates back that far.

Discussion and Recommendations: The site is significant and appears well protected from beach erosion. The superimposed campground offers the probability of significant site disturbance from campers and the moving of fire pits, camp pads, etc. by Forest Service personnel in the future. Because of this probable disturbance, mitigation in the near future is recommended.

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CULTURAL RESOURCES INVENTORY OF LANDS ADJACENT TO LAKE

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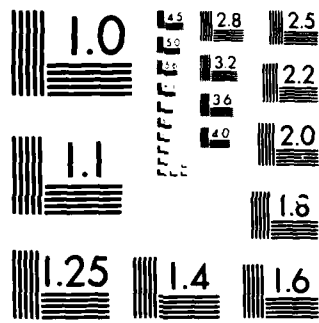
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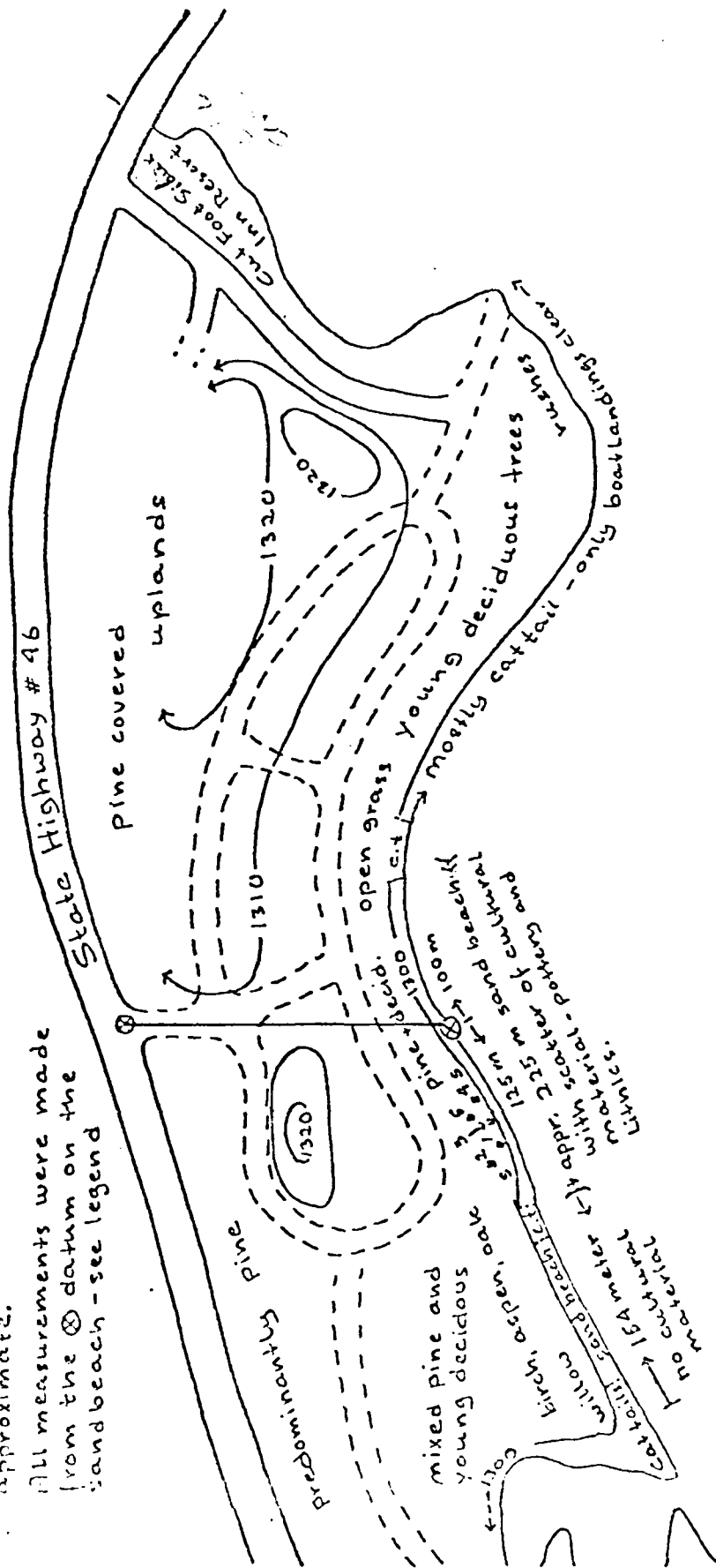
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Plotting of camp ground is only approximate.

All measurements were made from the ⊗ datum on the sand beach - see legend



O-NE-GUM-E CAMPGROUND [Chippewa National Forest]

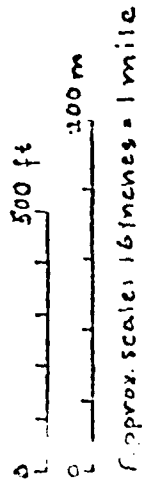
AND
21-1C-24

- Legend: ⊗ datum, due east of the center point between posts at main entrance to O-ne-gum-e Campground
- ⊞ testpits [screened]
- ⊞ shovel tests
- W

Beach profile at testpit #1

sand

164 meter
[23 ft]



21-IC-45 Pigeon River Inlet

Location: N $\frac{1}{2}$ SE $\frac{1}{4}$ Sec 25 and NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 30 T147N R28W

Description: The site is located on the west side of the Pigeon River Inlet to Lake Winnibigoshish. It includes an "island" of high (1310 feet) ground bounded on the north and east by the Pigeon River Flowage, on the south by Lake Winnibigoshish and on the west by a low marsh. The site continues westward from the inlet, past the marsh (which probably is a former channel of the Flowage); but the limit of the westward extent is not well defined. The site also extends inland and again, this extent is undetermined. Clusters of recent ricing pits are located in the interior. (See map.) There are numerous surface irregularities and the vegetation shows signs of disturbance in localized areas. It is possible that these reflect past human activity, significance unknown. (Early maps mark this area as an "Indian Village Site.")

Interior vegetation is a mature northern hardwood community with a dense shrub and fern cover.

The bank (Lake Winnibigoshish side) is from 2-4 meters high and is flanked by a 5-10 meters wide sand beach. Erosion ranges from moderate to severe.

A thin scatter of flakes and sherds was recovered from the beach and shallows; however, testing inland proved negative.

The site is on land owned by the Chippewa National Forest.

Cultural affiliation: Fur trade(?); Recent (Ojibwa ricing); Prehistoric (indeterminate affiliation).

Collections: University of Minnesota

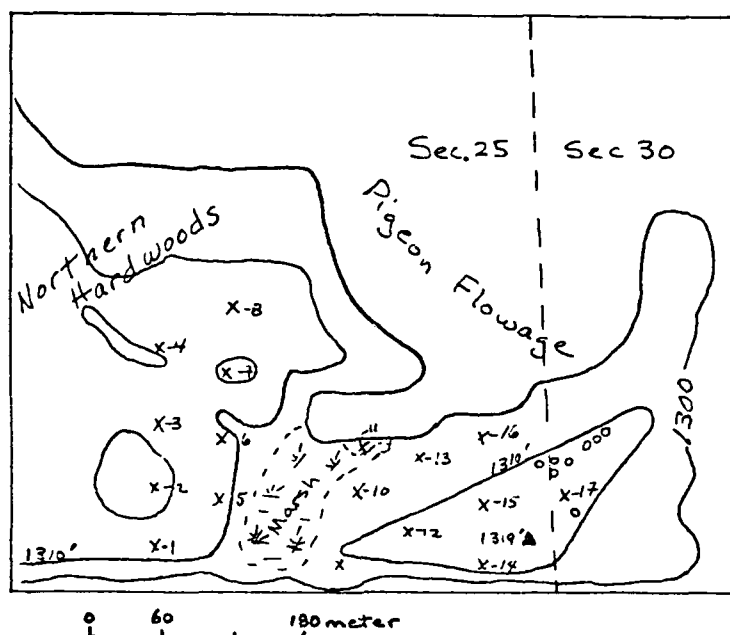
U of M Accession No.: 801-28 (1-6)

Cultural material:

Surface: The shoreline survey yielded: 2 dubious chert flakes from the shallows. And from the beach: 1 body sherd and 5 flakes (4 chert, 1 quartz).

Testing: A series of 17 shovel tests, roughly 40 cm square, were spaced across the interior at 50 m intervals. All were sterile except for Test No. 7 which yielded a metal stirrup-shaped clamp at 30 cm (associated with decomposing wood). Refer to accompanying map for test locations.

Discussion and Recommendations: This site is almost entirely submerged as indicated by the sterile test pits. Recent ricing pits are present but not culturally significant. It is possible that this area is that of one of the Fairbanks Post localities, but there is no direct evidence for this. The prehistoric component is submerged.



Scale: 1 cm = 60 m

X shovel test; circled if positive

o ricing pit

21-1C-45

N $\frac{1}{2}$ SE $\frac{1}{4}$ Sec 25
 NWNW SW Sec 30
 T. 147 N. R. 28 W.

Pigeon Dam Lake Quad



Photo 27. 21-IC-45 Bank erosion.



Photo 28. 21-IC-45 River flow.

21-IC-27 Plug Hat Point

Location: Lot 1, NE 1/4 Sec 26 T146 R27W

Description: An undeveloped lot just south of the National Forest Campground is preserved and posted as a "Chippewa Village Site." The area has a short grass cover, lightly wooded with mature oak and young red pine. The 4-5 m high sand bank supports a grass, weed and sumac growth.

A wide cattail marsh extends from below the bank approximately 200 m out into the lake, marking the original location of the site. During years of low water, an extensive collection of cultural artifacts was recovered from the sand flat by Creech.

Negative surface reconnaissance and testing show that the site is now completely underwater.

Midway between Plug Hat Point and the public access road 1000 m to the north, a small collection of artifacts was recovered from the beach by a local resident. Immediately south of the access road, a buried soil horizon is clearly exposed 20 cm below the surface in the severely eroded high sand bank. Three lithic flakes were found on the beach at this location.

Cultural affiliation: Middle and Late Prehistoric; Historic Chippewa

Collections: G. H. Boettcher, Deer River
E. F. Creech, Cass Lake
University of Minnesota, 1976 survey

U of M Accession No.: 801-1

Cultural Material: Surface: G. H. Boettcher, who owns the second summer home north of the Plug Hat Campground, has a small collection of artifacts from the beach below his home. The collection includes:

- 1 grooved maul
- 1 grinding stone or mano
- 1 hammerstone
- 1 large chopping tool of black chert
- 1 stemmed projectile point of white granular chert, 4.1 cm long

E. F. Creech's collection includes:

- 130 rim sherds
 - 99 Blackduck
 - 12 Sandy Lake
 - 9 Brainerd ware
 - 1 possibly Laurel
 - 9 unclassified
- 55 lithic artifacts
- 39 modified flakes
- 2 unmodified flakes
- 11 worked bone fragments

Testing: On April 1977, 4 shovel tests, 50x50 cm square and 100 cm deep, were excavated on the point. In addition, a trench .5 m wide x 2 m long x 1 m deep was excavated from the sloping bank in to the level ground surface.

21-1C-27

Plug Hat Point

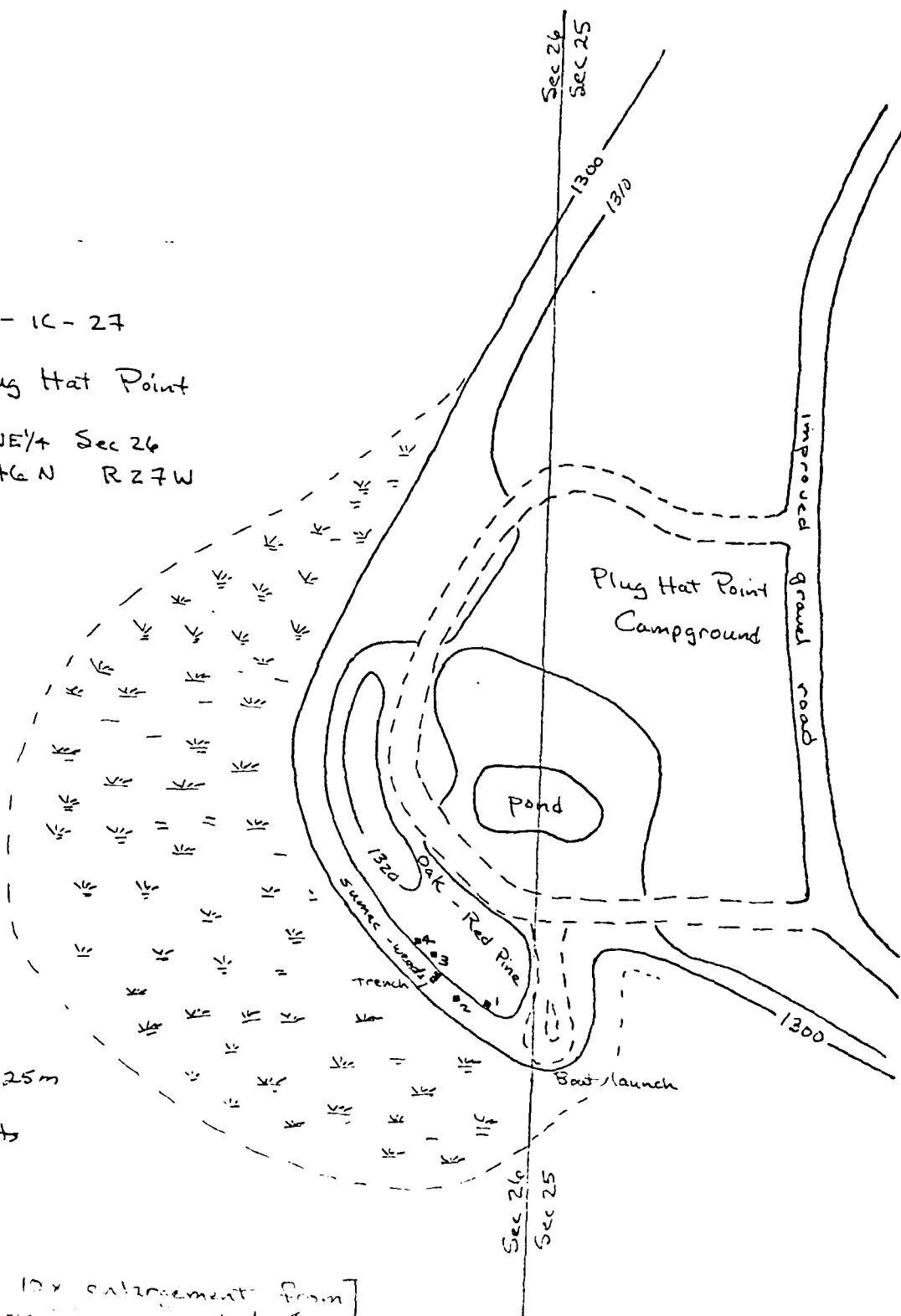
NE 1/4 Sec 26
T146N R27W



Scale: 1 cm = 25 m

- shovel tests
- ▬ trench

[sketched as 10x enlargement from
U.S.G.S. map of Winnepigoshish L. Quad]



21-IC-28 Sugar Lake

Location: SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 14 T146N R29W

Description: This is a high northeast trending-point on the northwest shore of Sugar Lake. There is a bench mark at the top and apex of the point. Maximum elevation is 1335 feet. The slopes are extremely steep and are wooded on the upper $\frac{1}{2}$, confining severe erosion to the lower $\frac{1}{2}$ of the slope. The beach varies from 2-5 m in width and is generally cobbly supporting small patches of weeds. There is a spring at the base of the point. Vegetation is a mature northern hardwoods association with a thick growth of hazel near the apex of the point. Ceramics were found on the beach and coming from the eroding bank. Nine shovel tests excavated on top of the point proved sterile except for 1 flake.

Cultural Affiliation: Late prehistoric, Blackduck and Sandy Lake.

Collections: E. F. Creech, Cass Lake
University of Minnesota

U of M Accession No. 801-41. Creech's collection is temporarily accessioned IC-28-(1-6).

Cultural Evidence:

Surface: Creech's collection from the surface includes:

8 rim sherds (7 Sandy Lake [4 shell, 3 grit]; 1 Brainerd ware)

6 decorated sherds (probably Blackduck)

67 body sherds (3 net impressed, 3 smooth, 61 cord impressed [13 shell, 48 grit])

2 regularly shaped, polished stone of unknown significance

Shoreline survey conducted in May 1977 yielded:

From the beach:

15 body sherds (7 cord, 3 stamped, 1 net impressed, 4 indeterminate [5 are shell tempered, 10 grit])

2 chert flakes

1 bone fragment

From the bank:

10 body sherds

3 stamped (shell)

5 cord (4 shell, 1 grit)

1 smooth (shell)

1 indeterminate (shell)

Testing: Nine shovel tests were excavated on the point; each roughly 50x50 square and 50 cm deep. All were sterile except for Test No. 4 which yielded one quartzite flake at 30 cm.

Typical stratigraphic profile: 0-10 cm dark, rich humus

15-65 brown loamy glacial till

Bank cuts show that this till deposit is at least 2 m thick.

Specific locations of each test are on record at the University of Minnesota and are available upon request.

Discussion and Recommendations: The cultural material occurs in the open, eroding bank which has slumped from the upper surface. Wave action undercuts the bank causing the slumping. Test excavations indicate that there are no cultural materials left in situ on the remaining undisturbed land.



Photo 29. 21-IC-28 Shoreline area.



Photo 30. 21-IC-28 Sugar Lake beach below B.M. 1335.



Photo 31. 21-IC-23 Sandy Lake ware rim sherds.

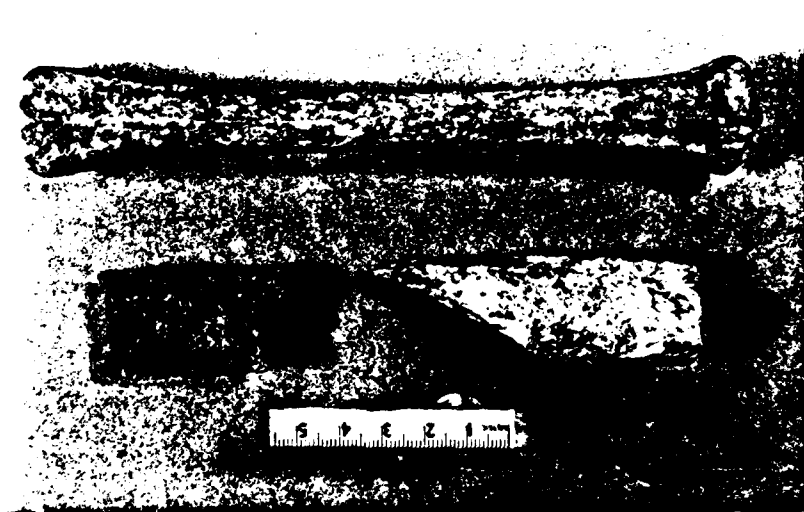


Photo 32. 21-IC-23 Small bone with evidence of cutting and splitting.

21-IC-32 Mississippi Inlet

Location: Centre SW $\frac{1}{4}$ Sec 35 T146N R29W

Description: The site is located on a 4-5 m high sand bank on the north side of the Mississippi Inlet to Lake Winnibigoshish. The bank has been severely cut back by water erosion and the eroded sediments have formed a prominent sand point extending approximately 100 m into the channel.

The sand flat supports a willow and shrub cover. A pine-hardwood mix dominates the upland interior vegetation.

Cultural material was recovered from the shallow water, sand point and eroding bank; the largest concentration coming from the sand point. Testing on the upland interior showed that a thin scatter of cultural debris is still in situ.

The site is on land owned by the Chippewa National Forest.

Cultural Affiliation: Late prehistoric, Blackduck

Collections: E. F. Creech, Cass Lake
University of Minnesota

U of M Accession No.: 801-13 (1-32). Creech collection temporary Accession No.: IC-32-(1-47).

Cultural Material:

Surface: Creech has a large surface collection from this site, which includes: 63 rim sherds

- 33 Blackduck
- 25 Sandy Lake
- 2 Brainerd ware
- 1 possibly Laurel
- 2 unclassified

26 decorated sherds

413 body sherds (81 shell temper; 332 grit temper)

- 10 stamped surface
- 18 net impressed
- 4 smooth

The remainder are cord impressed or indiscernible.

37 lithic artifacts

237 utilized flakes

214 unmodified flakes

1 piece ivory scrimshaw

1 lead musket ball

Material recovered from the shoreline survey conducted 13 August 1976:

Sand point:

- 1 rim sherd (Blackduck)
- 1 decorated sherd (punctate)
- 32 body sherds

3 stamped

29 cord impressed

(all grit tempered)

1 side notched projectile point (brown chert)

1 broken projectile point (chert)

1 utilized blade (brown chalcedony)
1 small chopping tool (quartz)
22 flakes (12 quartz, 7 chert, 1 red jasper, 1 basalt, 1 petrified wood)
2 bone fragments
Eroded bank, beach and shallows north of sand point:
3 rim sherds (2 Blackduck, 1 possibly Laurel)
1 sherd with punctates
14 body sherds (all cord impressed with grit tempered)
1 side notched projectile point (chert)
9 flakes (7 quartz, 1 chert, 1 felsite?)
1 bone fragment
Shallows were rechecked 17 August 1976, yielding:
1 near rim with no decoration
9 body sherds (8 cord impressed with grit temper)
(1 smooth with grit)
2 quartz flakes

Testing: Fifteen test units, 50x50 cm square, were excavated on the upland interior, within 2-15 m of the bank edge.

Tests No. 1-3: Excavated to 45 cm. All sterile.

Stratigraphy: 0-8 cm sod and sandy humus
8-45 uniform buff sand

Test No. 4: Excavated to 110 cm.

Stratigraphy: 0-8 cm sod and dark sandy humus
8-68 brown sandy loam
68-110 fine buff sand

Material recovered: 2 rim sherds (possibly Laurel)
5 body sherds (cord impressed/grit tempered,
1 possibly fabric impressed)

Test No. 5: Excavated to 50 cm. Sterile.

Stratigraphy, same as No. 1.

Test No. 6: Excavated to 85 cm.

Stratigraphy like No. 4. One near rim with oblique linear punctates.

Tests No. 7-9: Excavated to 40 cm.

Stratigraphy like No. 1. All sterile except for a small metal hoop from No. 8.

Test No. 10: Excavated to 60 cm.

Stratigraphy same as No. 4.

Material recovered: 10 cm 1 fragment of non-human tibia
50 1 body sherd (cord impressed, grit tempered)

Tests No. 11-13: Excavated to 75, 70 and 55 cm respectively.

Stratigraphy like No. 1. All sterile.

Test No. 14: Excavated to 110 cm.

Stratigraphy like No. 4. One body sherd and 1 quartz flake were recovered.

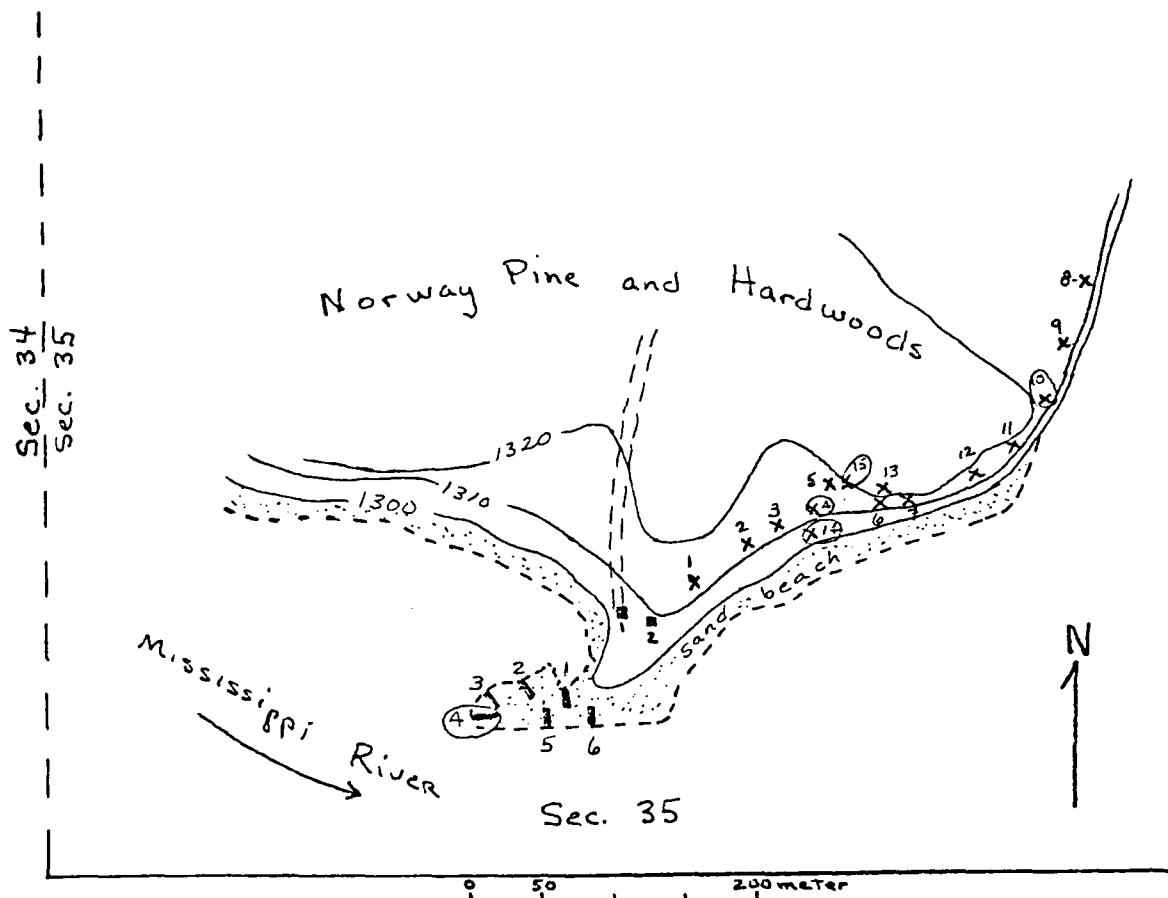
Test No. 15: Excavated to 55 cm.

Stratigraphy same as No. 1.

Material recovered: 1 body sherd and 1 quartz flake

Six test trenches were excavated in the sand point. All were sterile except No. 4 which yielded 1 pot sherd. In October 1976 two additional test units, 50x50 cm square were excavated on the level upland above the sand point. Both were sterile. Stratigraphy was in keeping with that described above except that a thin charcoal lens at 12 cm was encountered in unit No. 2.

Discussion and Recommendations: The original shoreline here extended as a long point at the mouth of the Mississippi River inlet and it seems most probable that the major portion of the site was on that point and that the thin scatter of materials from the test trenching represent the extreme inland edge of the former site. Erosion is severe and it is recommended that intensive testing or limited mitigation be undertaken to salvage the remnants of the site.



- test trench (6)
- 50 x 50 cm test unit (2)
- x shovel test; circled when positive



Photo 33. 21-IC-32 Shoreline toward east.



Photo 34. 21-IC-32 Eroding shoreline.



Photo 35. 21-IC-32 Early through Late prehistoric projectile points; knives (Creech collection).

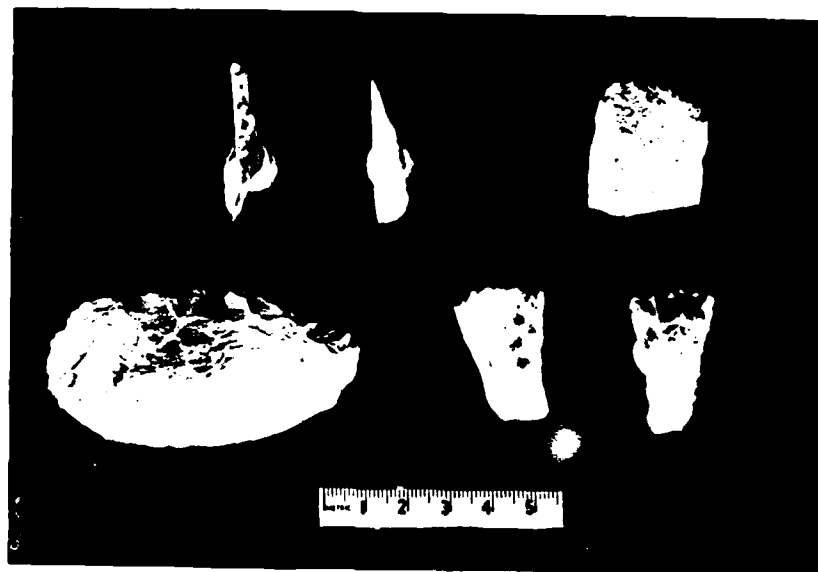


Photo 36. 21-IC-32 Birins (upper left), knife (lower left), and scrapers (right) (Creech collection).

21-IC-33 Not named.

Location: The north bank of the Mississippi River above the inlet in the NW 1/4 SW 1/4 Sec 35 T146N R29W.

Description: The site is on a 12 foot level area above the beach bordering the river. The beach area is overgrown by cattails, the slope to the level upland is eroding in places but is generally covered with young jack pine, willow, aspen and sumac. The upland has a vegetation cover of burr oak, jack pine, birch, and an occasional red pine.
Ownership: Chippewa National Forest.

Cultural Affiliation: Multicomponent; Middle and Late prehistoric with Blackduck, Sandy Lake, and some Brainerd ware ceramics.

Collections: E. F. Creech
University of Minnesota

U of M Accession No. 801-14-1-8

Cultural Material: Creech has an extensive collection made on the beach area and the eroding bank. His collection includes 64 pottery rims with 32 Blackduck and 23 Sandy Lake, 1 Brainerd ware, and 1 Laurel. Lithic artifacts numbering 37 in total include a range of objects dominated by knives and scrapers but with only seven projectile points.

Testing:

- U. of M. Shoreline survey, negative.
- U. of M. Bank slope: 1 quartzite flake, 4 body sherds.
- U. of M. Upland surface: 1 body sherd.
- U. of M. Shovel tests: 21 shovel tests at approximately 10 m intervals were placed along the upland. The stratigraphy or soil profile was similar in each and showed an A or humus horizon averaging 15 cm in depth with scattered charcoal from 5 to 10 cm. The soil is sand. Below this level is a uniform buff sand extending to at least 1 m in depth. All but the four furthest upstream test pits produced cultural materials and in each case these materials came from the upper 15 cm of the excavations. Materials include:
 - 11 cord/grit body sherds
 - 1 chert flake and 1 quartzite core
 - 1 charred nut fragment

Discussion and Recommendations: The original shoreline extended south and has since eroded, but a significant portion of the site remains. The unusual range of lithic artifacts in the Creech collection suggests that the habitation represents a temporary seasonal gathering for some activity not related to hunting, and if so, this site becomes very important in understanding Blackduck and Sandy Lake subsistence seasonal cycles. Although the remaining site area is not highly productive of materials, it does extend along the river bank for over 150 m and is of significant size. Erosion is moderate to light but is taking place. It is recommended that this site receive intensive testing to further determine its significance.



Photo 37. 21-IC-33 Open, eroded bank.

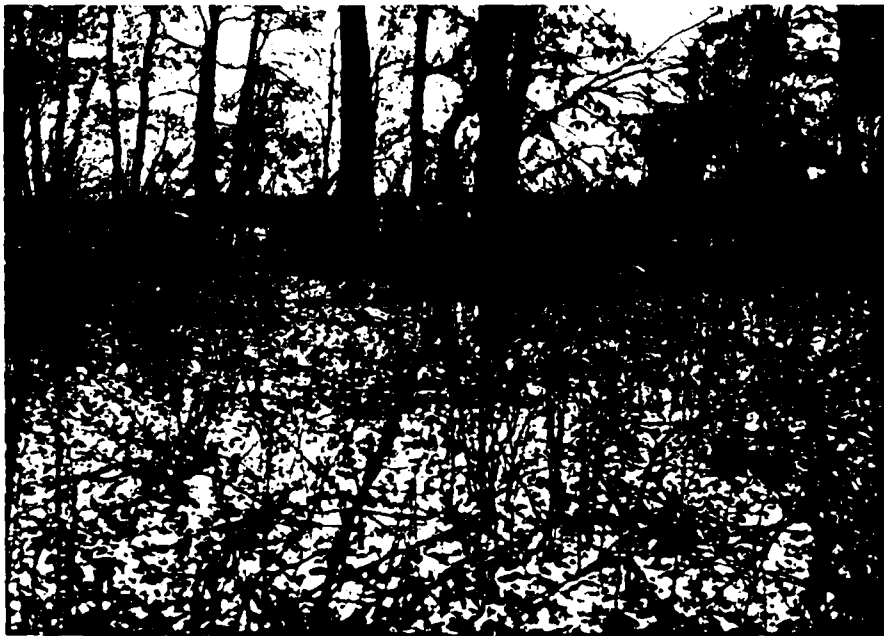


Photo 38. 21-IC-33 Inland vegetation cover.



Photo 39. 21-IC-33 Sandy Lake ware rim sherds.

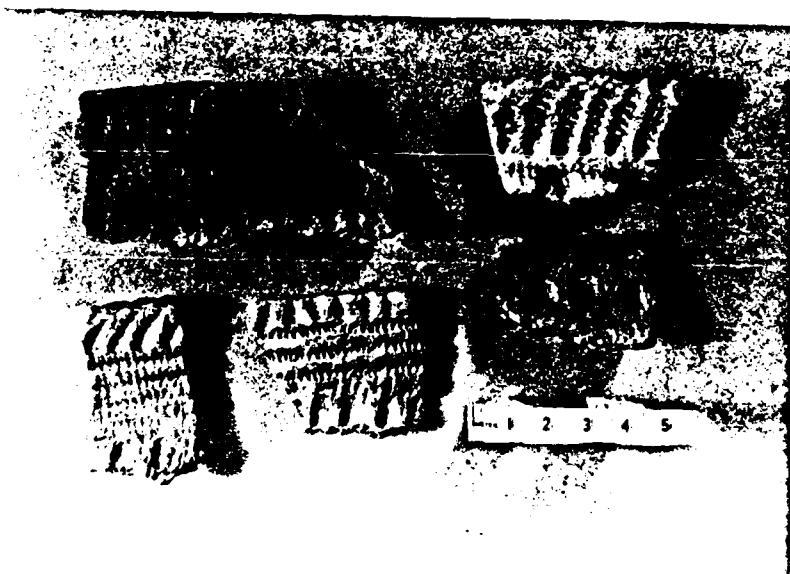


Photo 40. 21-IC-33 Blackduck ware rim sherds.

21-IC-34

Location: North bank of the Mississippi River above the lake inlet in the
E $\frac{1}{2}$ SE $\frac{1}{4}$ Sec 34 T146N R29W

Description: The site is located on a 12 foot flat upland area adjacent to the river. The area is identical to that of site 21-IC-33 which is located $\frac{1}{4}$ mile downstream. A steep bank slope to the river edge is grass covered, and the shoreline has grass vegetation to the water edge. Young jack pine, birch, burr oak, and scattered low brush form the upland vegetation cover. Slight erosional opening appear at the base of the slope.

Ownership: Chippewa National Forest.

Cultural Affiliations: Late prehistoric, Blackduck. (Site map is included in previous section on site 21-IC-33.)

Collections: University of Minnesota survey.

U of M Accession No.: 801-15-1-9.

Cultural Materials: U. of M. Surface finds include a grit tempered sherd from the upland; 17 cord marked sherds from erosional openings. One of these sherds is a Blackduck rim, two are decorated Blackduck body sherds, the remainder are undecorated body sherds. Six lithic flakes, including 1 brown chalcedony, and 3 bone fragments were bank surface finds.

Soil tests: One rice threshing pit on the upland was noted as a surface depression and was bisected with no resulting materials. Eleven test pits were excavated on the upland surface. All were in line parallel to the bank edge and all were taken to 60 cm. The common soil profile shows an A or humus horizon of only 4 to 6 cm underlain by fine buff colored sand. Test pit No. 6 (see map) varied in that a dense black soil was located from 20-34 cm below the surface and underlying clear sand. This soil produced a large fire cracked rock. Only three of the test pits produced cultural material, and except for the fire cracked rock, these materials came from the upper levels. Only two corded body sherds and one chert flake were found.

Discussion and Recommendations: This appears to be a very thin site and one would speculate that it could be a continuation of 21-IC-33 located $\frac{1}{4}$ mile downstream--except that no materials were located in the intervening area. The site is not endangered and does not warrant intensive survey or mitigation. If intensive survey is done on site 21-IC-33, however, the area of the present site around test pit No. 5 should be stripped horizontally to expose the dark soil located at the 24 cm depth. This appears to be a feature of some sort and should be examined.

21-IC-35 Not named.

Location: The north bank of the Mississippi River above the inlet and $\frac{1}{2}$ mile upstream from 21-IC-34. It is in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 34 T146N R29W.

Description: The location, height of upland, and character of the site is identical to both IC-33 and IC-32. The vegetation cover on the upland is the same young birch, burr oak, jack pine, and occasional red pine. The bank slope to the river edge is very steep here and eroding severely in several places. Several recent, deep ricing pits occur on the upland. (Site map is included with data on site 21-IC-33)

Ownership: Chippewa National Forest.

Cultural Affiliation: Late prehistoric, Blackduck.

Collections: University of Minnesota survey.

U of M Accession No.: 801-16-1-8.

Cultural materials: Surface materials from the eroding bank and shallow water include 2 Blackduck rim sherds, 2 decorated Blackduck body sherds, 23 cord marked body sherds, 3 utilized lithic flakes, 9 lithic debitage flakes, and 3 bone fragments.

Test Pit materials: Three of 7 shovel tests each produced 1 sherd from the upper humus zone; four test pits were sterile. Two of the rice threshing pits were tested; neither was lined, and neither produced any cultural materials. They are presumed to be very recent.

Discussion and Recommendations: The site is very thin, but is eroding rapidly. The data collected do not warrant any mitigation efforts, but additional testing at the time site IC-33 is tested is warranted. It is entirely possible that this site and sites IC-34 and IC-33 are actually one site area and simply represent a shifting and somewhat scattered camp plan. The intervening areas lack cultural materials, however, and it was decided to separate the localities of finds into separate areas. Future excavations will be needed to determine the exact nature and possible interrelationships of these three sites.



Photo 41. 21-IC-34 Bank profile.



Photo 42. 21-IC-34 Inland vegetation.

21-IC-36 Sugar Island

Location: W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec 19 T146N R28W. E $\frac{1}{2}$ SE $\frac{1}{4}$ Sec 24 T146N R29W.

Description: This site is located on the south shore of Sugar Island and extends from the 24/19 section line east for 200 m. The beach is a 4-7 m wide sand and cobble deposit with a pushed up berm (ice pressure ridge) separating it from a low, wet inland terrace. The level terrace rises to 2 m above the beach at the eastern portion of the site. The shallows are overgrown with marsh vegetation. Inland vegetation is a mature northern hardwoods community. Bank erosion is moderate along this portion of Sugar Island.

Flakes were recovered from the shallows, beach and eroding bank. Testing yielded a very thin scatter of flakes.

The site is on land owned by the Chippewa National Forest.

Cultural Affiliation: Prehistoric, possibly Archaic.

Collections: University of Minnesota

U of M Accession No.: 801-12-(1-7)

Cultural Material:

Surface

August shoreline survey yielded:

- bank: 1 cortical flake (quartzite)
1 possible core (quartzite)
- beach: 8 flakes (6 chert, 1 quartz, 1 chalcedony)
2 large chert cores
- shallows: 1 retouched chert flake
1 chert flake

Beach and shallows of narrow constriction of land in the northern most portion of Sec 25 yielded 3 chert flakes.

In May the shoreline was rechecked, yielding:

- bank: 2 small quartzite flakes
- beach and shallows: 1 retouched chert flake
4 flakes (2 chert, 2 quartz)
1 bone fragment from a large mammal

Testing: Eleven tests were excavated on the terrace behind the stretch of shore yielding the material listed above. See accompanying map for location of tests.

Test No. 1: Excavated to 75 cm (water table). Located in the low wet terrace immediately behind the ice pressure ridge.

Stratigraphy: 0-5 cm rich dark topsoil with charcoal
5-18 alternating fine sand and dark silt lenses
18-30 black and orange soil--layered with large charcoal pieces
30-75 grey silty clay grading into coarse sand and gravel at the bottom.

Material recovered: 35 cm 1 quartzite blade

Test No. 2: Excavated to 62 cm.
Stratigraphy same as Test No. 1.
Sterile.

Test No. 3: 50x50 cm square unit excavated to 42 cm. Sterile.
Stratigraphy: 0-5 cm dark topsoil
5-11 varved sand and silt deposit
11-42 fine silty brown clay

Test No. 4: 50 cm square, excavated to 50 cm. Sterile.
Stratigraphy same as No. 3.

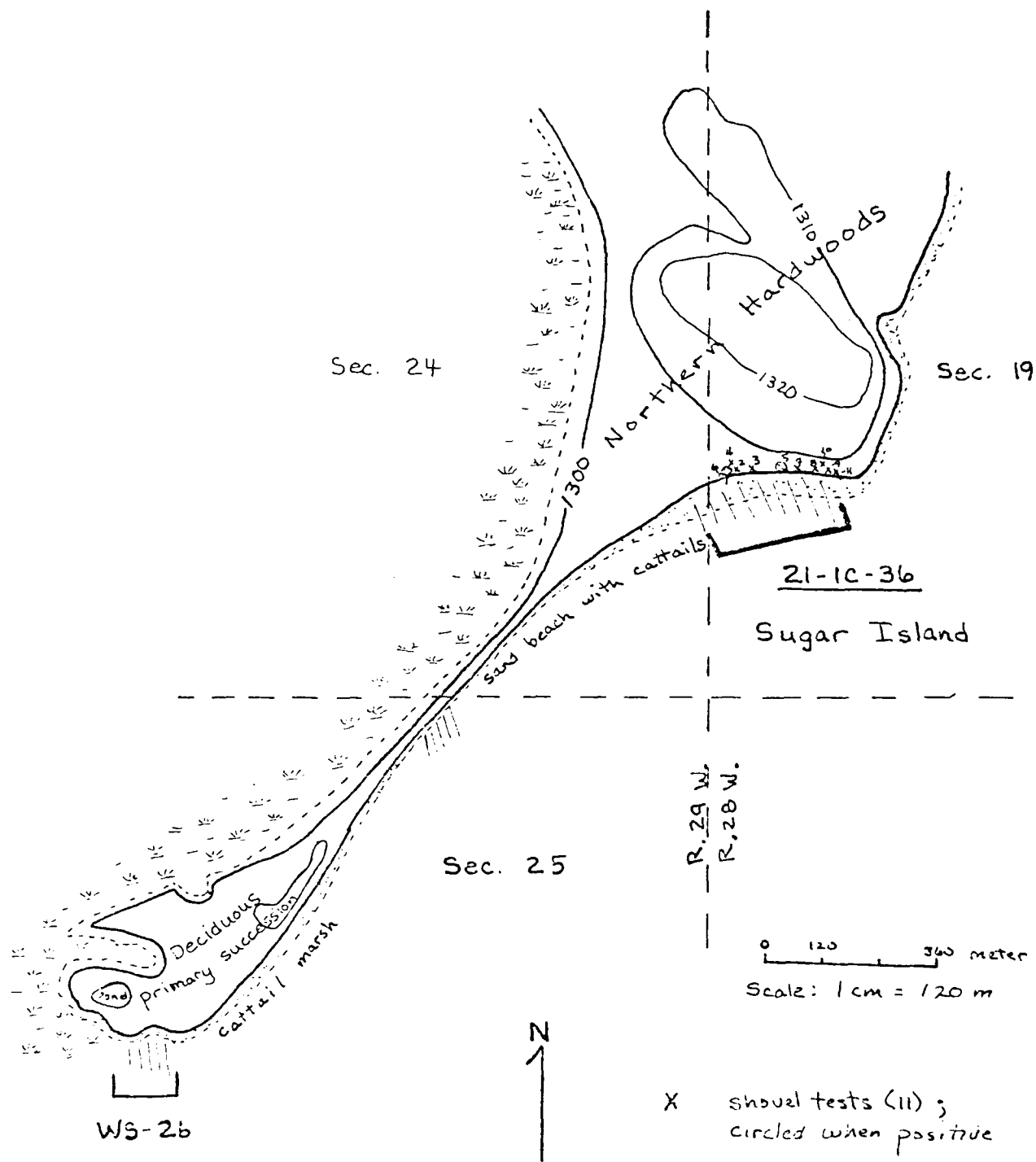
Test No. 5: 50 cm square, excavated to 80 cm.
Stratigraphy: 0-5 cm dark topsoil
5-50 sand deposit
50-60 dark soil horizon with charcoal
60-80 loamy glacial till with cobbles
A single quartz flake was recovered.

Test No. 6: 35 cm square, located in the low wet terrace immediately
behind the ice pressure ridge. Sterile.
Stratigraphy: 0-20 cm red sand deposit, unsorted
20-40 fine till

Test No. 7: 35 cm square, excavated to 70 cm. Sterile.
Stratigraphy: 0-10 cm dark topsoil (with charcoal flecks)
10-63 fine sand and silt deposit
63-70 friable loamy glacial till

Tests No. 8-11: Each 35 cm square, excavated to 55 cm. All sterile.
Stratigraphy same as Test No. 7.

Discussion and Recommendations: The nature of the site and its cultural affiliation are indeterminate. The lack of any pottery sherds in the surface collections suggests the possibility of a preceramic component. The lack could also be caused by destruction of the more fragile pottery by wave action. The extensive flooding of this land area with the raising of the water level indicates the major site or sites are now eroded and submerged.



X shovel tests (11) ;
circled when positive

//// areas yielding cultural
material

21-IC-37 Williams Narrows Campground

Location: NW $\frac{1}{4}$ Sec 35 T147N R27W

Description: The site comprises the higher terrace (1310-20 feet) immediately north of the McAvity Bay Summer Home Group. This terrace now forms part of the southwest loop of the Williams Narrows Campground (see Map).

It rises abruptly from the southeast shore of McAvity Bay and its steep northwest side, which runs parallel to the shore, is rapidly eroding--several mature trees are undercut at present and their roots partially exposed. Cultural material can be found eroding out of the bank. The subsoil is very sandy and overlaid with a 15 cm sod and humus layer. Vegetation, at present, is predominantly a thin scatter of pine, birch and oak with hazel understory; the ground surface, where not graded into camping pads and roads, is covered with short grass.

Cultural Affiliation: The cultural material found is of a fairly general type: a number of flakes, some utilized, and one end scraper of jaspelite. A number of projectile points have reportedly been picked up and taken away by amateur collectors in the past, but nothing is known of their appearance. The absence of pottery suggests an early date, possibly Archaic or even earlier.

Surface Collection Owners: University of Minnesota; Chippewa National Forest.

U of M Accession No.: 801-3-(1-13)

Cultural Material: A surface survey of the shallows, beach and bank was conducted and the eroding bank was again checked later in the fall.

Shoreline survey:

Shore, sandy beach and eroding bank were checked on 8/2/76 and yielded 3 crude flakes (1 fine grained quartzite, 1 quartz and 1 basalt) that had been washed out of the eroding bank.

On 8/23/76 the same area yielded an end scraper of jaspelite from the eroding bank northwest of test pit No. 2 and 1.5 m below sod horizon.

The same eroding sand bank, on 10/15/76, yielded 3 flakes (2 whitish, 1 orange/pink coarse grained chert) from the area below test units No. 1 and 2.

Testing: Six test units were excavated on 8/23-26/76; all 50 cm square and 80-100 cm deep. The soil was screened through $\frac{1}{2}$ inch mesh. Refer to accompanying map for location of units.

Test No. 1 Excavation to a depth of 1 m.

Stratigraphy: 0-15 cm humus and sod

15-100 uniform fine grained tan sand

Material recovered: 15-cm quartz flake

50-55 1 large utilized quartzite flake

2 retouched grey quartzite flakes

3 retouched pink chert flakes

Test No. 2:

Stratigraphy: 0-15 cm sod and humus
15-70 very fine tan sand
70 and down hard packed, bleached, rust stained soil
Material recovered: 20-25 cm 4 flakes 1 quartzite
35-45 2 flakes 1 translucent agate
50-55 2 flakes 5 whitish/grey chert
50-70 sterile

Test No. 3: Excavated to a depth of 65 cm.

Stratigraphy: 0-9 cm dark sandy topsoil (charcoal found under sod)
9-65 buff, very fine sand with some clay
Material recovered: 25 cm retouched agate flake
38 cracked rock, very smooth cortex, possibly
fragmentary hammer/grind stone
40 grey, coarse grained chert flake

Test No. 4: Excavated to a depth of 70 cm.

Stratigraphy same as No. 3.
Material recovered: 54 cm a small pocket of rounded rocks and a
few cracked rocks found--cultural?
Otherwise sterile.

Test No. 5: Excavated down to 70 cm.

Stratigraphy: 0-13 cm dark sandy humus with dense roots
13-47 light tan, fine, sandy subsoil
47-70 lighter, fine, sandy subsoil
Material recovered: 35 cm utilized quartzite flake
50 quartz flake
55 pink quartz core/flake

Test No. 6: Excavated down to 60 cm.

Stratigraphy: 0-20 cm dark sandy humus and roots
20-60 light tan sandy subsoil
Sterile.

Relationship to 21-IC-23, Williams Narrows: An extensive archaeological site which covers the peninsula south of the narrows--privately owned by the Karau family--as well as the peninsula north of the narrows. This site has yielded a wealth of cultural material ranging in date from Archaic (possibly even earlier) to Historic.

Careful surface survey by the University of Minnesota team on 8/2/76, as well as shovel testing on the terrace comprising the northern loop of the Williams Narrows Campground, proved negative (locations of tests are indicated in Map of 21-IC-23. Therefore, there seems to be no continuity between 21-IC-23 and 21-IC-37, but this impression could be misleading.

Discussion and Recommendations: The site appears to be relatively well protected except for the probability of disturbance by campers and modifications of the campground layout. Because the survey results showed a very thin occupation in the areas tested and produced no diagnostic cultural materials, it is suggested that this site require further testing and then be reevaluated.

Cut Fort Sioux Lake

0 155[50] 31[100] m [H]

Williams Narrows [CNF] ↑
Camp ground loop
Southwest loop

↑ I-IC-37

Rocky Beach
Eroding sand bank

Summer
Home lot

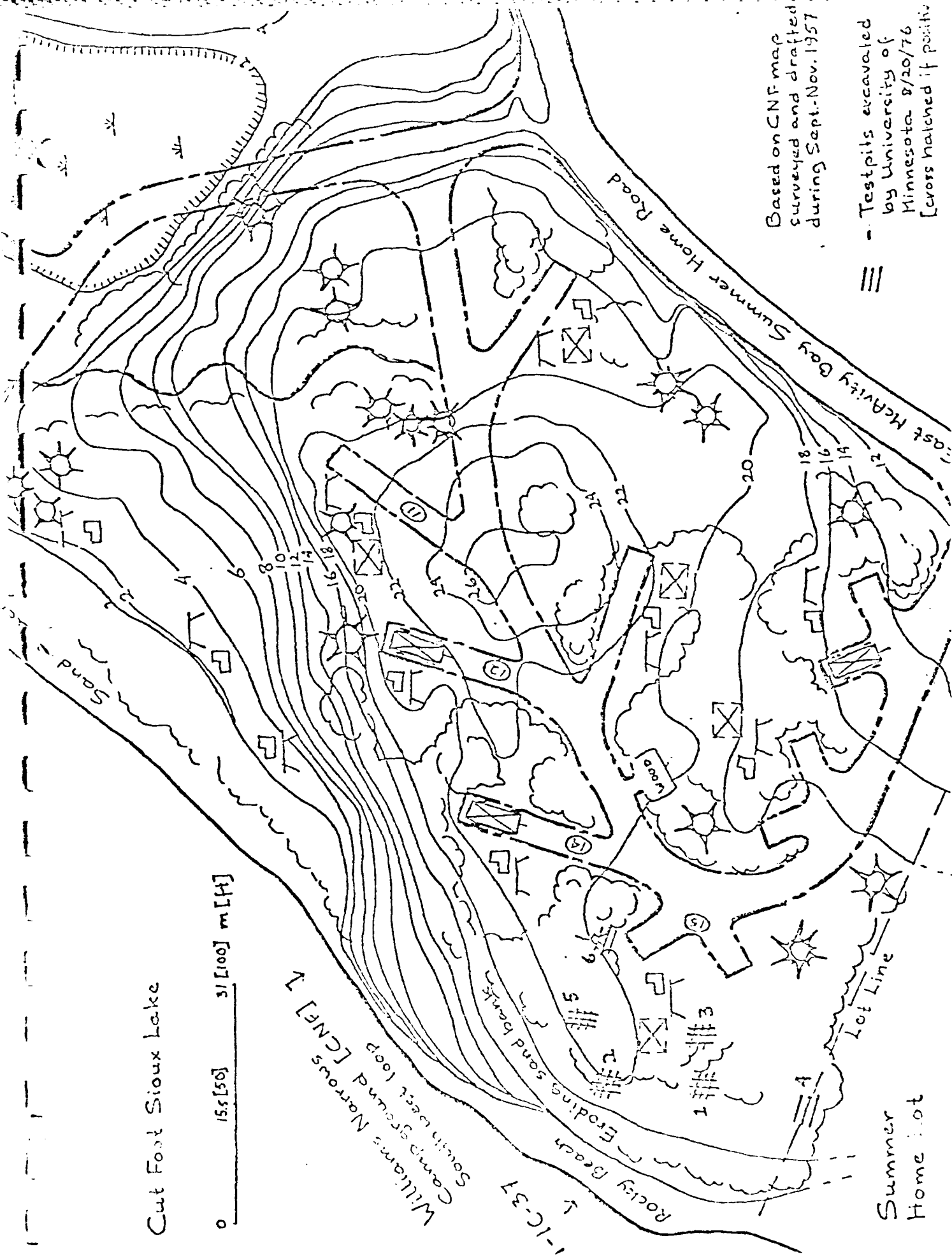
Lot Line

Summer Home Road

≡

Based on CNF map
surveyed and drafted
during Sept.-Nov. 1957

- Test pits excavated
by University of
Minnesota 8/20/76
[cross hatched if positive]



21-IC-39 Unnamed

Location: SE 1/4 SW 1/4 Sec 26 T147N R27W

Description: The site is located on the west side of the peninsula north of Williams Narrows, between 300 and 400 m north/northwest of the narrows, on a level terrace (all contained within the 1300 contour) at the foot of the steep 40 foot incline in the northern part of the peninsula. The terrace is at present covered with grass vegetation and a thin scatter of hardwoods. Its southwestern edge has been eroded away by wave and ice action--cultural material can be found on the sandy beach below and in the shallows. Testing on the terrace, 8-10 m in from the 1300 contour, suggests that it still contains undisturbed cultural deposits.

Cultural Affiliation: Middle and Late prehistoric

Surface collection owners: Chippewa National Forest;
University of Minnesota
Mr. and Mrs. L. Karau, Williams Narrows

U of M Accession No.: 801-5

Cultural Material:

Surface

Shoreline survey: initially done by University of Minnesota on 7/30/76 and repeated by C. Harrison on 10/30/76 as receding water level had exposed a considerable amount of new material.

Shallows and wet sand (7/30/76):

21 grit tempered sherds:

- 1 combed, stamped and cord wrapped stick impressed sherd (Blackduck)
- 1 rim/shoulder sherd impressed with cord wrapped stick and punctates (Blackduck)
- 1 rimsherd with cord wrapped stick impressions on outside and inside (Blackduck)
- 1 smooth surfaced sherd with small "jabbed" impressions on the outside (Laurel)
- 2 smooth surfaced incised rimsherds (Laurel)
- 1 cord wrapped paddle treated rim
- 7 cord wrapped paddle treated body sherds
- 1 combed sherd
- 7 badly waterworn sherds, surface treatment uncertain

15 flakes (11 quartz, 4 chert)

Shallows and wet sand (10/30/76):

10 grit tempered sherds:

- 1 combed rim/shoulder sherd with cord wrapped stick and punctate impressions (Blackduck)
- 9 body sherds, badly waterworn, seen mostly cord impressed
- 1 broken lithic artifact, probably a knife (granular chert)
- 5 flakes (1 jasper, 2 chert, 2 quartz)

Dry sand beach (10/30/76):

1 possible grinding stone

3 flakes (2 quartz, 1 grey chert)

Previous surface finds--have been numerous. Many of them are now in the Karau collection at Williams Narrows. Again, as in the case of 21-IC-23, objects of copper have come from this area.

Testing: Two shovel tests (No. 6 and 7) were excavated in August by the University of Minnesota, and 1 test (No. 27) was excavated by C. Harrison in November. Each was 50x50 cm square and 75 cm deep. See map of northern peninsula of 21-IC-23 for location of these tests.

Test No. 6: 0-8 cm sandy humus

8-75 beach sand deposit which yielded 2 flakes (1 chert and 1 unidentified)

Test No. 7: Similar to No. 6 in stratigraphy. Sterile.

Test No. 27: Excavated by C. Harrison:

Stratigraphy: 0-15 cm sandy humus

15-40 tan sandy subsoil

40-70 bleached sandy subsoil--sterile

Material recovered: 10-20 cm 1 grit tempered sherd (split)

20-30 1 grit tempered sherd (with smooth surface)
some cracked (fire-cracked?) rock

Discussion and Recommendations: The site appears to be intact and free of disturbance. The presence of Laurel pottery sherds with Blackduck indicates a multicomponent site, probably stratified. Given the minimal amount of Laurel culture material located in this survey, the site should offer useful information the nature of the Laurel occupation. Intensive testing at some time in the future would be warranted.



Photo 43. 21-IC-39 Quartz and chert debitage.

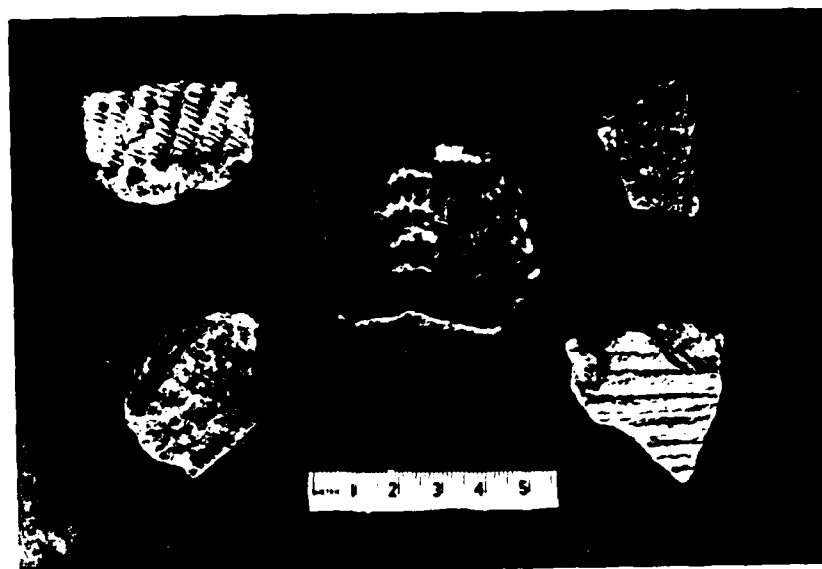


Photo 44. 21-IC-39 Water worn Blacklick and net impressed sherds.

21-IC-40 Unnamed

Location: SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 26 T147N R27W

Description: Cultural material has been found on the beach and in the shallows along a 350-400 m stretch that begins approximately 100 m (330 ft) east of the 26/27 section line and runs west for 70-80 m, then north/northwest for approximately 300 m; and inland from this beach in the western half of the lower terrace (contained within the 1300 ft contour) and on the higher area north of this terrace, where the 1310 ft contour comes out in a northwest pointing lobe. The lower "1300 area" is relatively level, turning increasingly marshy toward the east, and is covered with grass vegetation and scattered stands of hardwoods and pines. The higher area, the "1310 lobe," is sandy, well drained, covered predominantly with pines. Inland from the beach, the cultural material was retrieved through shovel testing; there were no surface indications of human occupation other than recent campfires.

Cultural Affiliation: Late prehistoric, Blackduck and Sandy Lake.

Surface collection owners: University of Minnesota
Chippewa National Forest

U of M Accession No.: 801-7 (1-5)

Cultural Material:

Surface:

Shoreline survey: conducted twice, once by the University of Minnesota (7/30/76) and again by C. Harrison (10/30/76) as receding water levels had exposed more beach area and cultural material in the intervening three months. During the latter survey, the shore was divided into segments for better control of distribution and density of finds. Area A--the 70-80 m stretch running east-west in section 26 yielded on 10/30/76:

Shallows:

6 grit tempered sherds:

- 1 combed rimsherd with punctates and cord wrapped stick impressions (Blackduck)
- 1 combed, undecorated sherd
- 1 cord marked rimsherd with zigzag lip (Sandy Lake ware)
- 3 cord marked body sherds

1 piece of quartzite with retouched edge

1 broken flake of argillite

2 flakes (1 granular whitish chert, 1 quartz)

Wet sand:

3 flakes (2 whitish/pink chert, 1 quartz)

Dry sand:

1 grit tempered rimsherd with cord wrapped stick impressions

2 grit tempered cord marked sherds

1 retouched flake

7 flakes (1 whitish chert, 6 quartz)

Area B--the approximately 300 m long stretch running northwest from Area A. The flint collection was made north of this:

Shallows:

- 1 grit tempered, cord marked rimsherd (possibly Sandy Lake related)
- 2 grit tempered, cord marked body sherds
- 1 quartz flake with retouched edge--possibly a fragmentary scraper
- 6 flakes (2 reddish, granular chert, 1 whitish/pink quartzite, 2 quartz, 1 greywacke)

Wet sand:

- 1 grit tempered, cord marked sherd
- 1 large and thin argillite blade with unifacial retouch and edge wear
- 2 quartz flakes

Dry sand, near bank:

- 3 flakes (1 whitish/pink quartzite, 2 quartz)

Area B--"1210 ft. lobe"; at the 160th m going north, the 1310 ft contour comes close to the shore, forming a high sandbank that culminates in height around the 180th m and then slopes down again to where the 1310 ft. contour turns inland at the 200th m. This bank is eroding and some lithic material was found falling out of it:

- 6 flakes (2 grey, granular chert, 2 tan granular chert, 1 quartz)
- 1 chunk of whitish chert with crude flake scars, possibly a core

Area B--the 150-300m stretch in general showed a thinning out of cultural material; only a couple of convincing flakes were found:

- 1 cortical, whitish/grey chert flake in shallows
- 1 quartz flake in the dry sand

Area B--total length, during the 7/30/76 survey, yielded mostly from the shallows:

- 1 miniature core scraper of white chalcedony or Montana Agate
- 1 projectile point preform of quartz
- 1 brown chert core
- 13 flakes

Area B--possible northern extension; it is possible that Area B continues farther than indicated by this survey. Although the 300-450 m yielded nothing and the two shovel tests on the ridge to the northeast of this beach (No. 14 and 15) were negative, the 450-600 m stretch yielded three quartz flakes from the shallows. From the 600th m to where the shore skirts the "1340 promontory" in the S $\frac{1}{2}$ of the NE $\frac{1}{4}$ of Section 27, nothing was found in either the shallows or the dry sand.

Testing: Shovel tests--location is shown on map of north peninsula of 21-IC-23. Tests No. 12 and 13 were done by the University of Minnesota team on 8/11/76 and No. 20-26 by C. Harrison on 11/10-11/76. All measured 50x50 cm and were taken down to 80 cm depth.
Lower "1300 foot level":

Test No. 12: located in the western part of this area

Stratigraphic profile: 0-15 cm humus

15 and on dark, sandy subsoil which yielded:

Material recovered: 1 quartz flake

some cracked (fire-cracked?) rock

Test No. 22: Excavated by C. Harrison

Stratigraphic profile: 0-12 cm humus
12-25 sandy subsoil
25-75 increasingly pale, tan, coarse
sandy subsoil

Material recovered: 10-20 cm grindstone (?), cortical flake
of grey chert
30-40 2 possible hammerstones, 2 crude
chert flakes, 1 cortical flake
of coarse grained rock with a
serrated edge, cracked rock
(possibly fire-cracked)

Test No. 23: Excavated by C. Harrison (11/76)

Stratigraphic profile: 0-12 cm humus
12-40 tan, fine grained soil
40 and down increasingly pale, fine, hard
packed subsoil

Material recovered: 13 cm utilized flake of whitish/tan chert
20-30 4 cracked (fire-cracked?) rocks

Tests No. 24-26: Located east of No. 23 and north of the marsh--
all negative.

Upper "1310 ft. lobe" level:

Test No. 13: Excavated by University of Minnesota crew.

Stratigraphic profile: 0-15 cm dark, sandy humus
15 and down light, sandy subsoil

Material recovered: 5-10 cm some charcoal and cracked rock

Test No. 20:

Stratigraphic profile: 0-8 cm humus
8 and down tan, fairly coarse sand

Material recovered: 10-20 cm a few cracked rocks
20-40 1 small piece of charcoal
a few cracked rocks

Test No. 21: Excavated by C. Harrison (11/76)

Stratigraphic profile: 0-12 cm humus
12 and down increasingly hard, sandy,
fine grained soil

Material recovered: 15-25 cm charcoal and cracked rocks
25-50 more cracked rocks (fire-cracked?)

Discussion and Recommendations: This is a low erosion area, thus mitigation
is not recommended at this time. As a non-ripping, seasonal activity camp
for Blackduck and Sandy Lake cultures, as seems probable, the site is of
particular importance in view of the lack of data on those cultures. For
this reason, intensive testing of the site is recommended.



Photo 45. 21-IC-40 Representative Blackduck ware rim sherds.

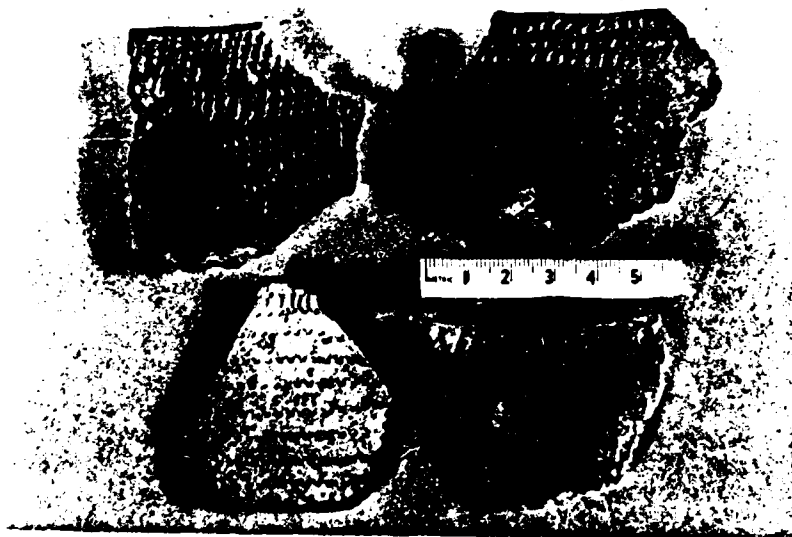


Photo 46. 21-IC-40 Representative Laurel ware rim sherds.

21-IC-41 Fur Post

Location: SE $\frac{1}{2}$ NE $\frac{1}{2}$ Sec 27 T147N R27W

Description: Three, possibly four house foundations are located on the south-central part of the wide, level area contained within the 1300 ft. contour and situation south/southeast of the high promontory in the S $\frac{1}{2}$ of the NE $\frac{1}{2}$ of Section 27. This level area is now relatively open, covered with grasses and weeds and thin stands of predominantly paper birch (a few pines in the northwestern part). Other surface irregularities near the foundations may also be man-made and may date from the same time as the foundations.

According to local informants, the foundations are the remains of a 19th century trading post. Mr. Karau, Williams Narrows, who has done some record search in the Minnesota Historical Society's files in St. Paul, feels that this was the post of the American Fur Company. Local collectors have reportedly picked up 19th century artifacts at the site; several can be seen in the Karau collection.

Cultural Affiliation: Fur Trade period; Recent period

Collections: Louis and Betty Karau, Williams Narrows Resort

U of M Accession No.: None

Cultural evidence: Survey reconnaissance and mapping of this site was completed by C. Harrison in November 1976 for the Chippewa National Forest Service. The following observations were made:

Foundations: Three of them were well enough preserved to be measured and mapped; the fourth, or rather the possibly fourth one, was too disrupted by tree growth to be identified with any certainty.

- A. Compass bearing taken from the W corner of the foundation to the NW tip of the vegetation covered part of Battle Point read 241° E of N. The SW wall stretches SE at 123° E of N for 4.5 m measuring the outer perimeter. The width of the structure (outer perimeter) was 4 m. A door opening is still visible in the SE wall. The thickness of the foundation as still showing is approximately 80 cm, the height approximately 50 cm.
- B. The W corner is located approximately 10 m, at 4° E of N, from the W corner of Foundation A. The dimensions and layout are similar to A--possibly a fraction smaller. The foundations are less well preserved and harder to distinguish. The long axis of the house (the SW wall) runs at 126° E of N.
- C. The NW corner measures in at 247° E of N and 12.6 m distance from the W corner of A. The outer dimensions of the structure were 5x5 m. There is a door opening in the E wall. The height of the foundations, as measured on the inside, is 20-50 cm; the thickness cannot be clearly distinguished any more. The main axis (the south wall) runs at 91° E of N. The distance from the SW corner to the 1300 ft. contour is approximately 5.5 m.
- D. Questionable--could have been caused by some other disturbance. Located approximately 17 m SE of foundation A.

Additional Notes: Circular depressions of possible cultural significance were observed by C. Harrison and are described below.

Location: S $\frac{1}{2}$ NE $\frac{1}{4}$ Sec 27 T147N R27W

Description: (and tentative interpretation)

Located on each of the three highest (1340 ft. contour) elevations on the NW part of the promontory are circular depressions, single or in groups, that are hard to explain as natural features--they have no "mounds" or traces of rotting tree stumps or roots to one side which could suggest a windfall origin and they are very regularly rounded, very uniform in diameter and depth. They are similar to the ricing pits found at a number of other sites round Lake Winnibigoshish (e.g., at the inlets and outlets of the Mississippi River and at the mouth of the Pigeon River) but their location makes such an explanation less logical in this case--the deep Eagles Nest Bay would probably not have been a good growth area for wild rice even before the raising of the lake level. It is still a possibility that rice was brought here from elsewhere. Surface reconnaissance across the rest of the promontory did not reveal any other conspicuous features, nor was any cultural material found on the beaches below. Shovel tests near the depressions were negative, but further testing may be a good idea.

Depressions: Compass bearings, when given, were all read using the boat landing below Eagles Nest Lodge, NE $\frac{1}{4}$ of SW $\frac{1}{4}$ Section 22 T147N R27W, as a marker. Abbreviated CB.

No. 1 CB: 336° E of N. Circular, 80 cm diameter, 50 cm deep.

No. 2 Located 8 m from and 14° E of N of No. 1. Circular, same dimensions as No. 1.

No. 3 Located 4 m from and 12° E of N of No. 2. Same dimensions as No. 2.

No. 4 Located 7 m from and 22° E of N of No. 3. Circular, 1 m diameter, 70 cm deep.

No. 5 Located 40 m from and 166° E of N of No. 4. Circular, 80 cm diameter, 50 cm deep--same as Nos. 1, 2, and 3.

No. 6 Located 4 m from and 90° E of N of No. 4. Same dimensions as No. 4.

No. 7 Located 11 m from and 70° E of N of No. 6. Circular, same dimensions as Nos. 1, 2, 3, and 5.

Nos. 1-4 and 6-7 are all located on the central of the three north-western 1340 ft. elevations on the promontory.

No. 8 Located on the easternmost of the three elevations. CB: 332° E of N. Circular, 1 m diameter, 40 cm deep.

Nos. 9-12 are found on the western of the three elevations, approximately 50-60 m SW of Nos. 1-7. CB: 340° E of N. There are two clear

and two not so clear shallow, rounded depressions, approximately 1-1.3 m in diameter and 20-40 cm deep, which makes them somewhat different from Nos. 1-8. A shovel test in one of them revealed a 3-4 cm thick layer of decayed matter and then yellow sand.

Shovel tests: 50x50 cm and 80 cm deep.

No. 16 Located 4 m W/SW of depression No. 7:
0-13 cm humus
13-80 tan, sandy subsoil
Negative.

No. 17 Due west of depression No. 3. Same soil profile as Test No. 16.
Negative.

No. 18 Due west of depression No. 4. Same soil profile as Tests No. 16 and 17. Negative.

Discussion and Recommendations: Several questions remain concerning the foundation outlines. The probabilities that they represent the remains of a 19th century American Fur Company post are high but must be verified by an intensive testing program. The date of occupancy and the name of the trader with whom the post is associated is very uncertain. The name of a trader named William Fairbanks recurs in both the records and in discussions with local informants. The early land survey maps shows the location of the "Fairbanks House" at the foot of Raven's Point--an area now submerged. Douglas Birk of the Minnesota Historical Society has informed us that the Jacob Brower field books record a note telling that the Fairbanks post was located at the foot of the bluff on the east side of the mouth of Cut Foot Sioux Lake--again an area now submerged. Birk interviewed E. F. Creech of Cass Lake and Creech reported that Fairbanks moved his location several times beginning at Raven's Point in 1867, moving to the area of the Corps Damtenders house location and thence to the site on the east side of the First River mouth. This latter location is recorded in the state site files as 21-IC-20, but intense survey of the area by our crews failed to produce any cultural evidence. That the structures at 21-IC-41 represent the Fairbanks post seem unlikely in view of the above information. They may well represent, however, an earlier American Fur Company post.

The circular depressions nearby which show no associated cultural materials are most probably very recent wild rice threshing pits.

The foundation structures appear to be safe from any erosional effects and outside any planned construction zones. The significance of the site should be determined by intensive testing, however, and it is recommended that this take place reasonably soon. Some evidence of unregulated excavation is present at the site, and the probabilities of disturbance through these and other acts of vandalism are high. Intensive testing should take place before additional disturbance occurs.

21-IC-42 Unnamed

Location: NE $\frac{1}{4}$ Sec 36 T147N R27W

Description: Two sandy beaches, stretching between 275 and 550 m S/SE of the 36/25 section line. Separated from 21-IC-24 by the bilobed marsh to its north and by 200 m of sterile sand beach north of the marsh. These two beaches, separated from each other by a 100 m long bay, fringe the east side of a low lying area (all contained within the 1300 ft. contour and only a few feet higher than lake level). All cultural material was found on the beach, within 4 m from the water. Six shovel tests, spaced at equal intervals south-north, a few meters in from the 1300 ft. contour, all proved sterile. The beach seems little affected by redepositioning and the clustering of some of the cultural material suggests that it is in its original place rather than washed up from the lake. The beaches are both located on the west side of and very near the deep channel of the First River Flowage which cuts through the Little Cut Foot Sioux Lake. This means that they, like 21-IC-24, would have been close to water also before the rise in the lake level due to the regulation of Lake Winnibigoshish. Similarly, they were close to the end of several important portage trails leading to other lake and river systems to the north and east.

Cultural Affiliation: Late prehistoric; Blackduck

Surface collection owners: Chippewa National Forest

U of M Accession No.: None

Cultural Material: All recovered from Harrison surface inspection 10/17/76 for the Chippewa National Forest Service.

Southern beach (total length north to south is approximately 125 m):

Only the central 59 m--those parallel to the 1300 ft. contour as it runs closest to water--are exposed; the north and south ends of the beach are covered with cattails and weeds.

Harrison's survey of the 59 m stretch from south to north reported the following:

0-20 m A 1-2 m wide, mostly pebble covered beach. No cultural evidence.

20-34 m A 3-3.5 m wide beach, mostly pebble covered but with sandy patches. No cultural evidence.

34-59 m A 3-4 m wide sand beach with a scatter of cultural material:

South 6 m A concentration of broken, hard, microcrystalline limestone pebbles with resulting flakes: whether these are the result of human activity or not is uncertain as none of them show definite shaping or edge wear; the raw material, however, has the same tool efficiency potential as granular chert.

Next 6 m 1 grit tempered cord marked body sherd
1 finely retouched triangular scraper of Knife River Flint

- 1 discoidal cutting/chopping tool of brownish/
tan granular chert
- 1 core/flake of granular quartz
- 1 flake of granular quartz
- Next 6 m A scatter of cracked greenstone
- Last 7 m More cracked greenstone
- 2 grit tempered body sherds with fine cord
impression
- 1 quartz flake with possible end retouch

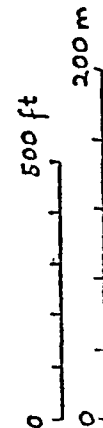
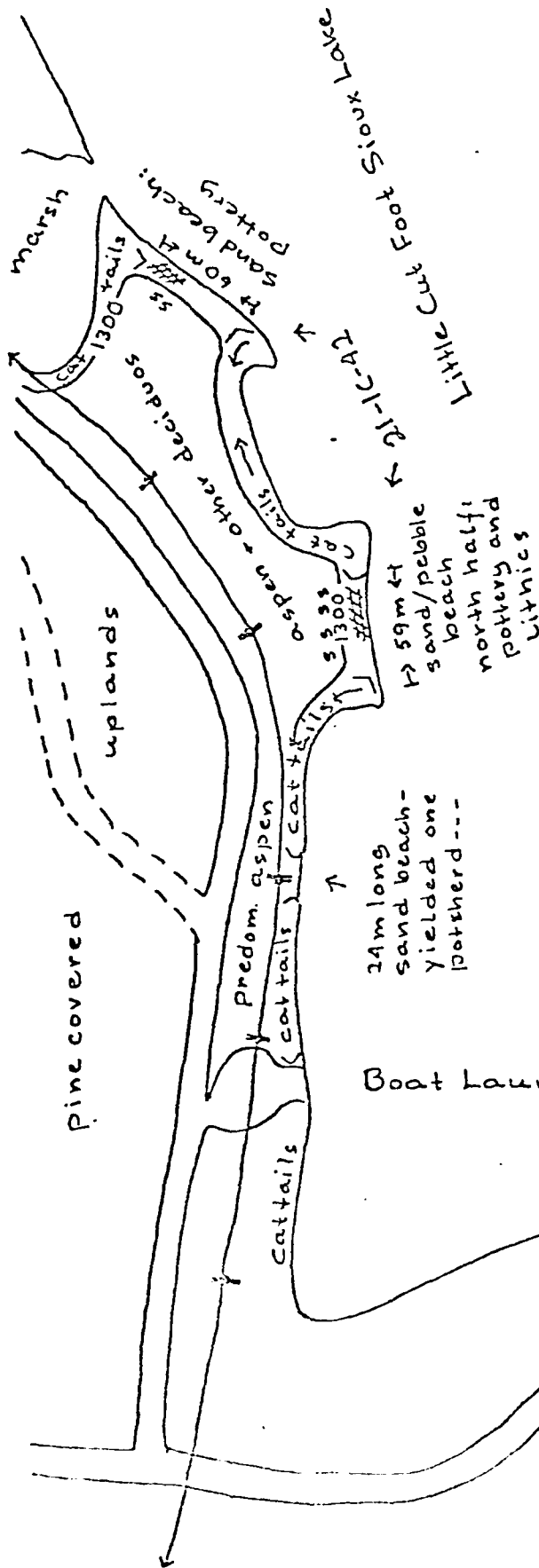
Northern beach: Similar in general topography to the southern beach, except that this one is all sand beach and slightly wider, averaging 4 m in width.

Only the central 60 m stretch yielded any cultural material:

- 2 grit tempered, diffusely cord marked body sherds
- 1 cracked rock (basalt) with one smooth, slightly concave surface and one smooth, slightly convex surface--possibly a fragmentary ground artifact
- 1 piece of cracked greenstone with a couple of very polished, flat or slightly convex facets--could be a fragmentary ground artifact

Possible extension to the west and south: On the shore south of the southern beach, cattails and other marsh vegetation grows thick and shoreline survey proved impossible except in one spot, a 24 m long and 4-5 m wide patch of sand beach, its south end measured to be 109 m north of the northern edge of the Little Cut Foot Sioux Boat Launch parking lot. Here, a grit tempered and water worn body sherd was found as well as some scattered cracked rock. This may indicate that the site extends further south.

Discussion and Recommendations: The site no longer is intact as the test excavations indicate.



Approximate scale: 16 inches = 1 mile

Legend: ### finds of cultural material
S shovel tests

21-1C-42
NE 1/4 Sec 36
T147 N R27W

21-IC-43 Mallard Point

Location: W $\frac{1}{2}$ Sec 32 T147N R28W

Description: This is an "island" of high ground isolated by wide marsh to the west and south and by open water of the Third River Flowage to the northwest and Lake Winnibigoshish to the east. A narrow point of redeposited sand extends 800 m north from the high ground and marks the former extent of the site before inundation. The sand beach is 6 m wide and is strewn with large cobbles and boulders. The interior is less than 1 m above the beach level and large shallow, now dry, bays indicate past flooding of the land surface. The interior vegetation is a mature hardwood growth. The sand point supports primary succession willows and shrubs.

Flakes were found scattered along the sand beach on the east side of the point. All have been redeposited from their original locations. Limited testing of the interior yielded a single flake.

The site is located on land owned by the Chippewa National Forest.

Cultural Affiliation: Indeterminate

Collections: University of Minnesota

U of M Accession No.: 801-42

Cultural Material:

Surface: Shoreline survey--flakes were recovered from the beach and shallows all along the east side of the point. Three areas of concentrated finds are designated as Areas A-C on the accompanying map.

Area A: Approximately a 50 m stretch of shoreline from the small bay in the centre of the east side of the high ground and continuing northward.

Material recovered: 5 flakes (4 chert, 1 quartz)
6 dubious flakes (waterworn)
1 fragment of polished bone

Area B: Approximately a 20 m stretch of shoreline beginning 90 m north of the north-projecting lobe of the 1300 ft. elevation line. This is located on the redeposited sand flat.

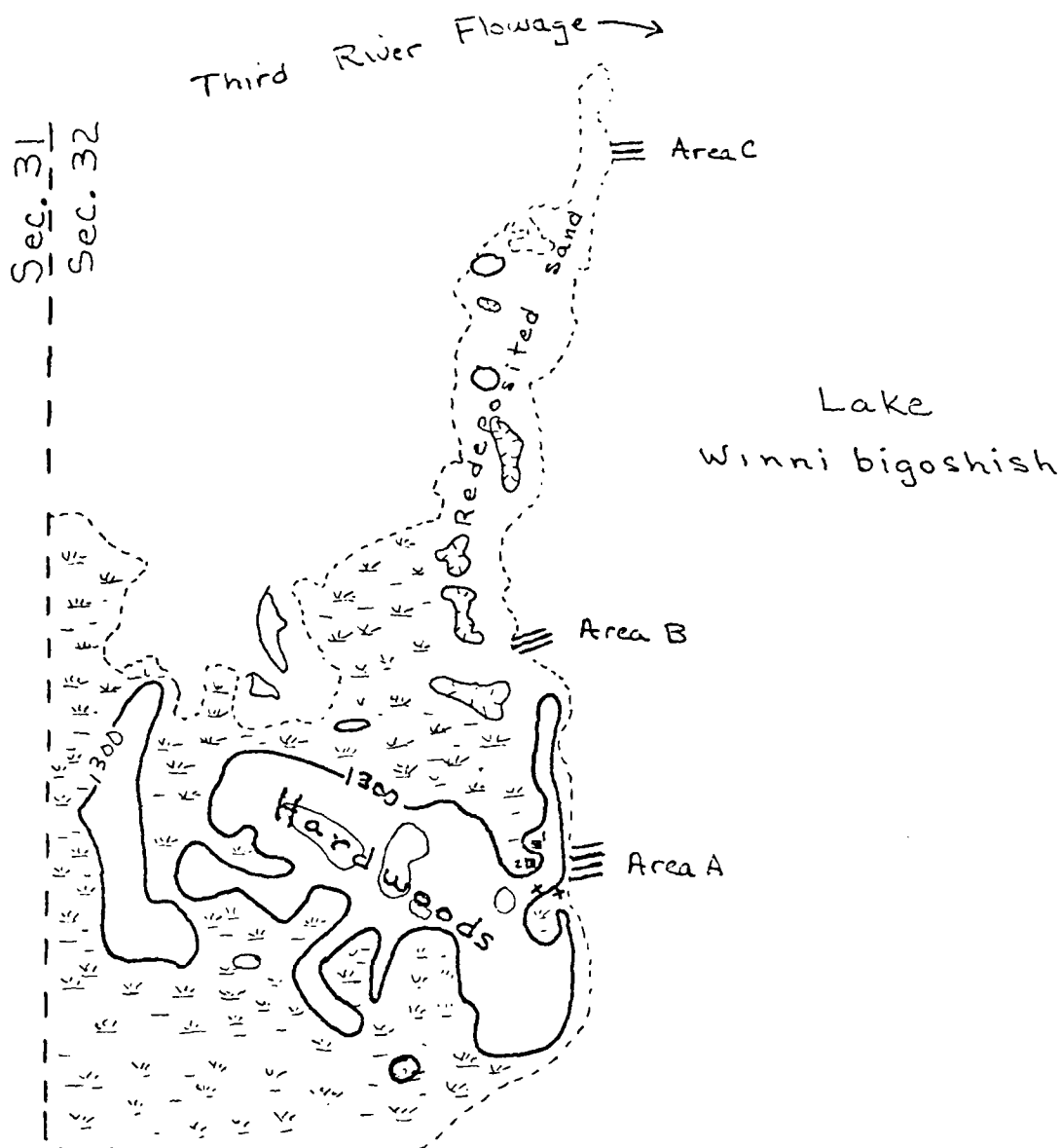
Material recovered: 1 side notched projectile point (brown chalcedony)
1 laterally retouched chalcedony flake
7 flakes (some possibly modified)
(4 chert, 2 quartzite, 1 chalcedony)
2 bone fragments

Area C: Located 100 m south of the extreme northernmost extent of the sand point. Material was recovered from the shallows scattered over an area of approximately 15 m in length.

Material recovered: 1 large rose quartz flake, possibly bifacially retouched
3 flakes (1 chert, 1 quartz, 1 quartzite)
3 dubious, waterworn flakes (2 chert, 1 quartzite)

Testing: Two test units, 80 cm square, and two shovel tests were excavated in the interior at Area A. All were sterile. Soil profiles showed no disturbance other than natural (i.e., periodic flooding). The soil under an uprooted tree, 1 m from Test No. 1 yielded 1 grey chalcedony flake. Two deep shovel tests were excavated to the water table on the sand flat at Area B (80 cm deep). Stratigraphy confirmed that this area has been redeposited.

Discussion and Recommendations: The site has been submerged and has no research potential.



0 100 400 meter
Scale: 1 cm = 100 m

21-10-43
Mallard Point

- N ↑
- //// areas yielding cultural material
 - 50 x 50 cm test units (2)
 - x shovel tests (2)

(enlargement from Dixon Lake Quadrangle)

21-IC-44 Not named

Location: SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 19 T147N R28W

Description: This is a small east/west trending point of land on the north shore of the Third River Flowage. It is 20 m wide and is from 1-2 m above the present water level. There is moderate erosion along the south bank. Pottery and flakes were found in the eroding bank, consistently at 30 cm below the surface. Material was also recovered from the shallows. Testing of the interior yielded numerous sherds and flakes. The site has been severely disturbed by the excavations of amateur collectors which pose a greater threat than erosion at this site.

Vegetation cover is a hardwood community at the northern extent of the site and young birch-aspen and willow at the apex of the point.

The site is just west of a newly constructed access road and boat launch.

The land is owned by the Chippewa National Forest.

Cultural Affiliation: Middle prehistoric

Collections: University of Minnesota

U of M Accession No.: 801-43

Cultural Material:

Surface

Shoreline survey, May:

Upper bank, south shore

1 sherd (smoothed net/grit)

Eroding bank, south shore

5 body sherds (smoothed net/grit)

2 flakes (chalcedony, chert)

1 bone chip

Shallows, south shore

1 body sherd (net impressed/grit)

1 possible core (pink quartzite)

3 flakes (1 quartz, 2 quartzite)

Bank, north shore

1 large chert core

Testing: Twelve shovel tests were excavated along the point. Refer to accompanying map for location of tests.

Test No. 1: Excavated to a depth of 50 cm.

Stratigraphy: 0-10 cm grey sandy humus

10-17 black soil

17-50 loamy till with rock

Material recovered: 7 cm 10 body sherds (all net impressed, some smoothed/grit)

9 1 body sherd (net impressed/grit)

15 1 possible flake

Test No. 2:

Stratigraphy: 0-18 cm (light humus)
18-32 mottled humus and brown clay
32-50 loamy till
Material recovered: 11 cm 1 rim sherd (Brainerd ware)
2 sherds (possibly net, but uncertain)
23 concentration of cracked rock

Test No. 3: Located in a small circular "mound," 70 cm high and 2 m in diameter. A shallow pit had been dug in this feature and a large quartzite flake was recovered from the back dirt.

Stratigraphy: 0-12 cm grey topsoil, friable
12-28 mottled humus and clay
28-40 black soil horizon--level with present surface
40-70 loamy till
Material recovered: sod 1 body sherd
10 cm 1 quartz flake
20 1 bone fragment (unidentified)
30 1 rim sherd (square lip, oblique slashes
on exterior under lip)
37 1 split sherd

Test No. 4:

Stratigraphy: 0-25 cm black humus
25-50 loamy till with stone
Material recovered: 10 cm 4 body sherds (net impressed/grit)
1 quartz flake
16 1 chert core (fire cracked)
2 cracked rocks

Test No. 5:

Stratigraphy same as No. 4.
Material recovered: 9 cm 1 body sherd (possibly smoothed net)
15 5 body sherds (surface treatment undetermined)
1 thick basalt flake

Test No. 6:

Stratigraphy same as No. 4.
Material recovered: 15 cm 1 body sherd
30 1 quartz flake

Tests No. 7 and 8: Both sterile.

Stratigraphy: 0-13 cm dark humus
13-50 fine loam

Test No. 9:

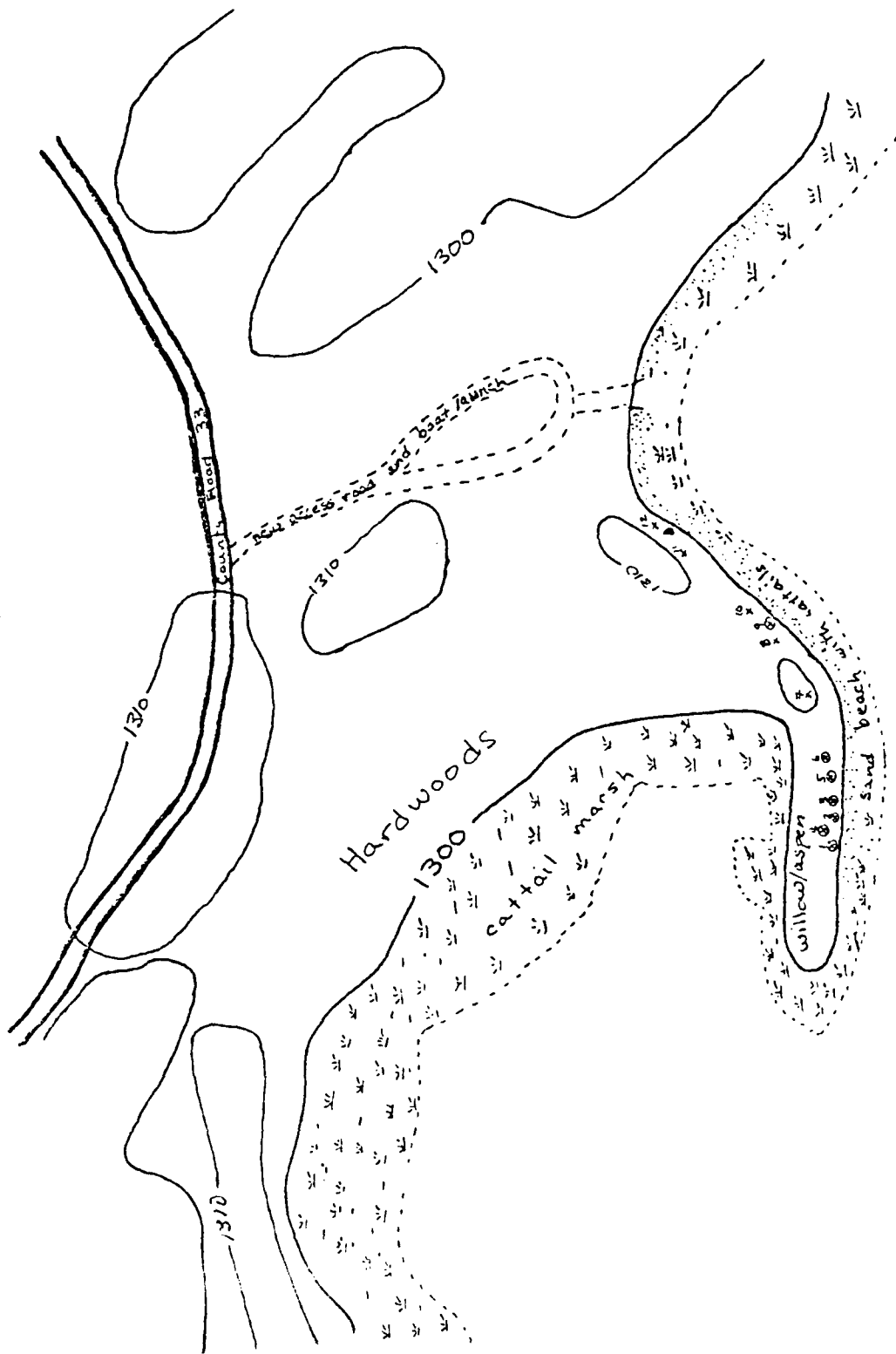
Stratigraphy same as Nos. 7 and 8.
Material recovered: 1 minute quartz flake } depths not recorded
1 possible core }

Tests No. 10-12: Located in the area of the most extensive disturbance by potting. All sterile.

Stratigraphy: 0-10 cm dark humus

10 and down fine loess

Discussion and Recommendations: Erosion is moderate at this site and presently the greatest threat is posed by amateur collectors. Preliminary testing shows that much of this site remains in situ. The ceramics suggest that this is a single component "Brainerd ware" site. It is thus of very great importance and every effort should be made to prevent amateur excavations. The erosion problem necessitates intensive survey. It should be noted that redeposited flakes and small sherds occur intermittently along the marsh edge throughout the entire flowage, but the source is unknown.



21-1C-44

N
0 25 100 meter
scale: 1 cm = 25 m
(10x enlargement from
Dixon Lake Quadrangle)

- X Shovel tests (12); circled when positive
- ▲ previously excavated trench (amateur) yielding 1 pot shard

21-CA-61 Burial Mound

This single small, conical burial mound is located across the outlet channel from 21-IC-4. It is outside the survey area but was recorded in the state site file and its location does appear on the large fold-out map.

Localities producing minimal cultural materials.

Site numbers have not been assigned.

- WS-1 A beach area in the NW1/4 Sec 13 T146N R27W. A narrow sand beach bordered by inland by a sand berm, and then 25 m of low land overgrown with willow. Eight small flakes of quartz and chert were found in the shallow water; no cultural materials were found on the beach or low land. Shovel tests at 15 m intervals inland produced no cultural evidence. A nearby summer resident reported finding 2 expanding stemmed projectile points and 2 asymmetric bifacially flaked knives some years ago.
- WS-2 This locality is in the SE1/4 SE1/4 Sec 26 T146N R27W and is on land occupied by the Tamarack Resort. One grey chert flake was found in a treefall mound on the lawn of the resort. "Indian burials" at this location were reported to the Chippewa National Forest headquarters. No evidence of such burials was seen. Permission to test excavate was impossible to obtain. This is a possible site, and at some time in the future, should be tested. Any construction activity by the resort owners that may require a permit should be preceded by test excavations.
- WS-4 This area is known locally as "Highbanks" and is in the SW1/4 SE1/4 Sec 20 T146N R27W. The land is owned by the Chippewa National Forest and is occupied by a Mr. Barnett who operates a resort. The very high vertically cut banks are eroding severely and in some areas, the resort operator has deposited gravel fill in an attempt to halt erosion. Two utilized flakes were found in the eroding bank, and 1 flake was found on the beach. The source of the latter could have been either the eroding bank or the gravel fill. The resort operator reluctantly allowed excavation of 2 50x50 cm test units. Both were sterile and both showed considerable recent soil disturbance.
- WS-5 Extensive low, open sand flats located between the open water of the lake and an inland marsh in the E1/2-Sec 20 T145N R28W. Extensive examination of the shallow water and the open sand flats produced 1 small water-worn pottery sherd and two small rolled flakes. They appear to have been redeposited from an area N-NE and now under water.
- WS-7 This is a point on the east shore of McAvity Bay in the center of Sec 2 T146N R27W. It is an extensive exposed sandy beach with active erosion of the timbered area inland. Five small, grit tempered body sherds of pottery and a very widespread scatter of 15 flakes were located on the surface. Nothing was located inland. This may have been a site at one time, but the limited amount of materials collected does not warrant a site designation.
- WS-8 This is a narrow sand beach with a severely eroding 1 m high bench at the north and a low marsh at the south. The water is very shallow. The area is located in the NE1/4 NW1/4, Sec 7 T145N R27W. 15 pieces of lithic debitage were found in the shallow water; nothing was found on the beach; and 7 test excavations on the higher ground (beach and its vegetative cover) were all sterile.

- WS-9 A narrow, elevated tongue of land at the 1310' contour bordered on the north and south by marsh and terminating at an eroding bank at the lake edge. One fragmentary projectile point was found on the beach below the high ground and one chert flake was found on the sand flat bordering the marshy area to the south. The area is located in the center of Sec 7 T145N R27W. No further materials were located in the water, on the beach, or on the upland.
- WS-10 A beach area bordering extensive shallows and a marshy inland area in the SE1/4 Sec 25 T147N R28W. Four possible flakes were found on the beach and 2 chert flakes and 1 fragmentary preform (?) were found in the shallow water. If this was a site at one time it is probable that it was located in what is now the shallow waters of the lake.
- WS-13 This locality is adjacent to the Mosomo Point National Forest campground located immediately east of the Hwy 46 bridge in NW1/4 Sec 25 T146N R27W. The Chippewa National Forest headquarters had recorded materials from this locality. The perimeter of the point, excluding a boat launching ramp area, is bordered by a light cattail stand extending into the shallow waters. Slight erosion at the tip of the point shows sandy soils extending down to 160 cm and overlying heavy coarse sand. Two small quartz flakes, and 1 possible flake of basalt were found in the shallow water. No cultural remains were located inland.
- WS-15 A small scatter of cultural remains including 6 lithic flakes and three water-worn sherds were located in the water. There was no evidence of site materials in place. The area is immediately east of a single, presumed burial mound (21Ic25) noted in the State Archaeologists files. The mound is located in the SE 1/4 of Sec 25 according to the records (the original record was made in the late 1800's) but the survey crew was unable to relocate it. It is possible that the original record of location is incorrect, or that the mound was destroyed when the water level was raised. The latter seems most probable.
- WS-16 This is a high, narrow point of land in Cut Foot Sioux Lake located in the south center of Sec 27 and the north center of Sec 34. The point is bordered by a narrow beach of gravel and cobbles. The Chippewa Forest records indicate cultural materials had been located on these beaches, but the survey team recovered only 5 possible flakes in 1/4 mile of beach survey along the west side of the point and only 8 flakes in a similar distance on the east side. No cultural materials were seen in the exposed, wave cut banks, and none were found on the crown of the narrow point. The evidence is too minimal for a site designation.
- WS-18 This locality is a narrow point at the west side of the channel connecting Lake Winnibigoshish and Cut Foot Sioux Lake. The inland segment of the point is low and has a dense vegetation cover of burr oak and brushy understory. The beach area is wide, and sandy and very unstable as it is exposed to considerable wave action. Beaches on both sides of the point were walked, the shallows were searched, and in an area some 3,000' or over 1/2 mile in length, 12 scattered, water-worn flakes were found. All could have been redeposited by water action. This locality is only a remote possibility for a site designation. That one or more sites are located here.

- WS-21 This is a small open beach and low upland at the edge of a marsh in the SE1/4 of Sec 28 T147N R28W. A scatter of lithic debitage and a fragment of a projectile point were found in the beach. Test pits in the inshore area where the vegetation cover is young elm, green ash, and brush showed a clay soil underlain at 60 cm by a very hard white layer resembling caliche. The five test pits were sterile. This is an equivocal locality when a site designation is considered. The minimal amount of material, the lack of any cultural materials in place, and the lack of cultural materials in the shallow water, indicates that the site designation would be inappropriate.
- WS-22 A small scatter of lithic debitage was found in a sand/gravel ice pressure ridge separating the main lake from a marsh. This is located in the center of Sec 28 T147N R28W. There is no indication of the source of this material--there is no evidence of a site at this locality.
- WS-23 This is a 100' stretch of open beach separating the main lake from a marsh. One quartzite and 5 chert flakes were found on the beach, nothing was found in the shallow water, and a test pit in the low area behind the beach was sterile.
- WS-24 At the SE1/4 of Sec 2 T145N R29W and located immediately below the former Lake Harry, is a low levee island with an open beach on Lake Winnibigoshish. Five quartz and chert flakes, 1 possible core remnant, and 1 oval sandstone abrading stone were recovered from the shallow water. No cultural materials were found on the beach nor were any located in three formal test pits and a series of shovel tests on the surface of the narrow island. All of the cultural materials showed water abrasion and could easily have been redeposited from the Lake Harry site.
- WS-25 This is a prominent point on the south shore of Lake Winnibigoshish, in the SE1/4 Sec 21 T145N R28W. It is low, contained within the 1300' contour, and is fringed by a cattail marsh up to 100 m wide on the east shore. The shallows and beach are littered with driftwood and numerous tree falls line the bank. The interior is wooded primarily with oak and birch. Mrs. George Denny of Denny's Lodge, 1 mile east of the point, reported that her father-in-law (now deceased) had collected artifacts from the point. These were later donated to the Cass Lake Museum. Surface reconnaissance of the point yielded only 2 small flakes.
- WS-26 Exposed sand deposits on the extreme southwest trip of Sugar Island, NW1/4 Sec 25 T146N R29W, yielded the cultural material listed below:
- 3 rim sherds
 - 1 - Blackduck
 - 1 - Sandy Lake
 - 1 - Brainerd ware (?)
 - 2 body sherds (cord impressed/grit tempered)
 - 13 flakes
- This is a likely area for a site location, as it once bordered a small channel between Sugar Lake and Lake Winnibigoshish. One raised water level for the island of the lake in which is now a cattail-meadow marsh. Island of Sugar Lake is a small island in the lake.

WS-27 Located on the west shore of Sugar Lake in the NE1/4 Sec 26 T146N R29W. It is a low stretch of land with aspen-birch forest to the North and a wide marsh to the southeast. The sand beach is 2-4 m wide separated from the wooded interior by a sand-pebble berm pushed up by ice action. The shallows are very mucky from drowned vegetation. Stan Johanson of the Chippewa National Forest Service reports that artifacts have been recovered here. Shoreline survey in May, 1977, yielded only 1 chert flake in the pushed up sand.

WS-28 Also located on the west shores of Sugar Lake. This is a point of low land (1290'-1300') in the SW1/4 Sec 23 T146N R29W. Stan Johnson reported that cultural material (type unknown) had been collected from this area. Shoreline survey in May, 1977 yielded:

- 1 split rim sherd
- 6 body sherds (cord impressed/grit tempered)
- 1 burned bone fragment

These were found on the sand beach at the point where the old logging road still visible on the Quad map passes an abandoned dwelling (also on the Quad) and joins the beach.

WS-29 This designates an extensive stretch of shoreline on the north side of the Third River Flowage just before it empties into Lake Winnibigoshish. It includes the West 1/3 of Sec 29 T147N R28W and extends 700 m westward into the east portion of Sec 30. This is a 2-4 m wide sand beach with a pushed up sand berm 1.5 m high, separating it from extensive back marsh to the north. The berm supports willow, poplar and associated pioneer species. The shallows extend far out into the flowage. Roughly the 1st 3 m are strewn with small cobbles. Flakes and lithic artifacts were thinly scattered all along this stretch but there were three definite areas of concentration. These areas are:

- Area A: Includes 150 m of shore; 100 m east of 50 m west of the boat launch.
- Area B: Stretch beginning 150 m west of boat launch and continuing westward 320 m. This area includes two small sand points each yielding a concentration of lithics.
- Area C: Wide, open sand flat, 44 m long (E-W) and 20 m wide (N-S). West of this point the sand beach abruptly ends and a wet marsh prevents further survey. This area is separated from area B by an 80 m stretch of beach, sterile of cultural material.

Cultural material recovered on shoreline survey April, 1977 yielded:

Area A:

- beach: 1 scraper (brown chalcedony)
- shallows: 2 lg thick discoid scrapers (Quartzite, fine grained)
- 1 sm. scraper (yellow chert)
- 1 crude drill (chert)
- 2 lg quartzite choppers
- 1 thick preform (quartzite)
- 1 broken quartz biface
- 2 lg thick biface (1 black chert, 1 quartz)
- 1 banded chert nodule with 1 retouched edge.
- 7 modified flakes (2 milky chalcedony (?), 3 quartzite, 1 lg, 1 sm, 1 lg, 1 sm)

27 unmodified flakes (18 quartzite, 3 chert,
6 quartz)

11 cores all of quartzite

4 dubious waterworn lithics

Area B is divided into three sub areas of concentration (See map)

sub area 1:

beach: 1 crude, thick bifacially retouched flake,
quartzite

5 flakes (2 quartz, 2 chert, 1 quartzite
+2 dubious waterwork flakes

shallows: 3 modified flakes (2 quartzite, 1 chert)

4 very large mod. flakes (quartzite)

3 unmodified flakes (1 quartz, 1 chert,
1 quartzite)

sub area 2:

beach: 1 battered flake (polished brn chalcedony?)

1 unif. ret. flake (scraper?) - yellow chert

1 thin flake (quartzite)

7 flakes (6 quartzite, 1 chert)

1 worn nodule of quartzite (?)

shallows: 1 projectile point with basebroken
lanceolate black-yellow quartzite
(either stemmed or notched)

tip of large unifacial knife (quartzite)

blade with steeply beveled scraping
edge (fine grain quartzite)

1 chert flake with all sides unifacially
retouched

9 unmodified flakes (4 quartzite,
5 chert)

4 cores (2 quartzite/2 quartz)

+4 dubious waterworn lithics

sub area 3:

beach: 1 side notched, concave base point
(black chert?)

1 projectile point preform (quartzite)

10 modified flakes (5 quartzite, 3 chert
2 milky chalcedony ?)

17 unmodified flakes (2 quartz, 5 quartzite,
10 chert)

1 petrified wood flake

+1 dubious waterworn lithic

shallows: 1 thick flake cutting tool - unifacially
retouched red quartzite

1 possible fragment of large cutting tool -
quartzite

1 retouched/utilized jaspilite flake

3 retouched quartz flakes

large blade cutting tool (?) crudely
shaped quartzite

13 unmodified quartzite flakes

4 cores (quartzite)

+6 dubious waterworn lithics

Area C:

- beach: 5 pot sherds (3 grit/cord)
1 steeply beveled chert scraper
1 retouched chert flake with scraping edge
1 small flake end scraper (chert)
1 small, finely unifacially retouched flake (chert)
1 fragment of large unifacially tool (quartzite)
15 modified flakes (2 quartzite, 1 limestone, 2 brown
chalcedony, 1 clear chalcedony, 7 chert, 2 petrified
wood)
+9 fragments polished bone + 1 tooth fragment
shallows: 1 thick flake tool, unifacially retouched (quartzite)
1 thick blade, slightly crescent shaped (quartzite)
1 small patinated chert endscraper
1 small blade (quartzite)
7 modified flakes (2 quartzite, 1 quartz, 4 ?)
24 unmodified flakes (8 quartz, 7 quartzite, 8 chert,
1 chalcedony)
+9 dubious waterworn lithics

WS-30 This area is located in East Seelye Bay on Little Cut Foot Sioux Lake,
SE1/4 Sec 22 T147N R27W. It is a narrow strip of land, less than 100
m wide which separates a small lake to the north from the bay, to the
south. It is flanked by a wide sand beach on the south side. A shoreline
survey of this stretch was conducted 3 times:

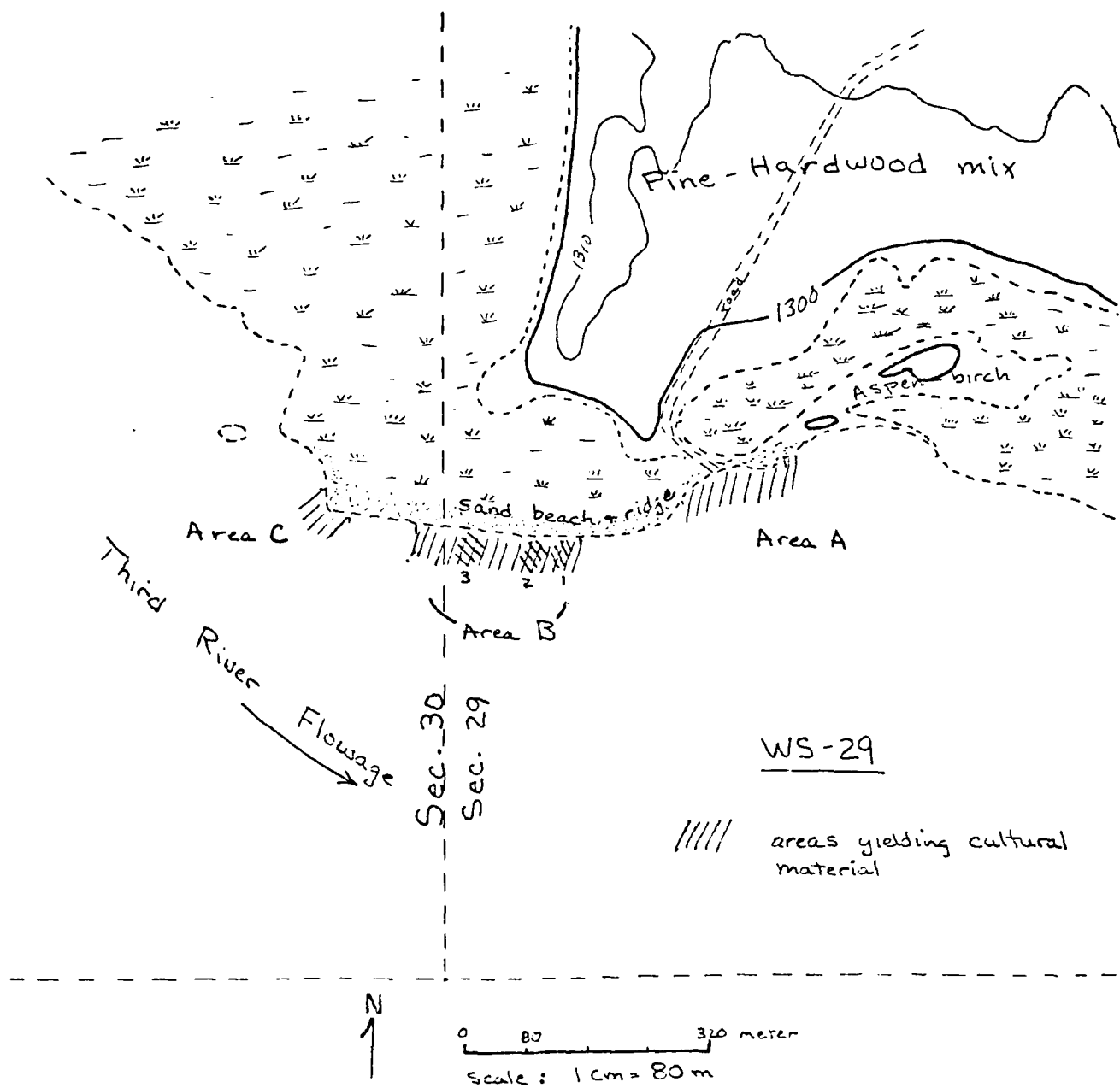
12 August, with negative results

4 September, the beach and shallow water yielded:

- 1 rim sherd (Blackduck)
5 body sherds (cord impressed/grit tempered)
1 utilized chalcedony flake
4 quartz flakes

24 October: 1 dubious flake was collected.

Owners of the resort on either side of this area stated that to their
knowledge no one has collected cultural material from this area. The
material recovered 4 September was most probably redeposited from 21-1C-22
which is now underwater.



WS-Richards Townsite

This area on the south bank was not numbered in the site survey system but it has been located on the accompanying base map. It is today a National Forest campsite, but this is the only evidence of human activity on the site. The site was platted and designated as a town in the late 19th century but the town was never physically created. The hoped for railway passed to the south and the town of Bena took the place of Richards as the railway townsite.

Chippewa National Forest records indicate that pottery has been found at the site. Our surveys produced no cultural materials, however, and a site designation is not warranted.

WS-Third River Bridge

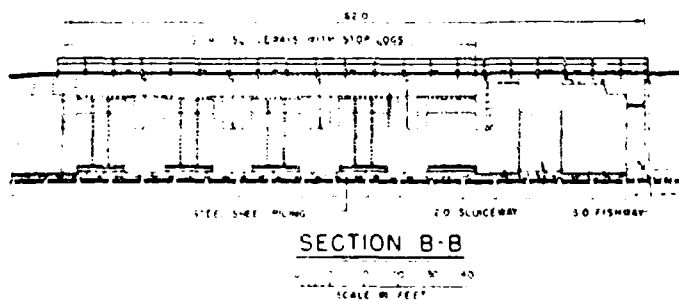
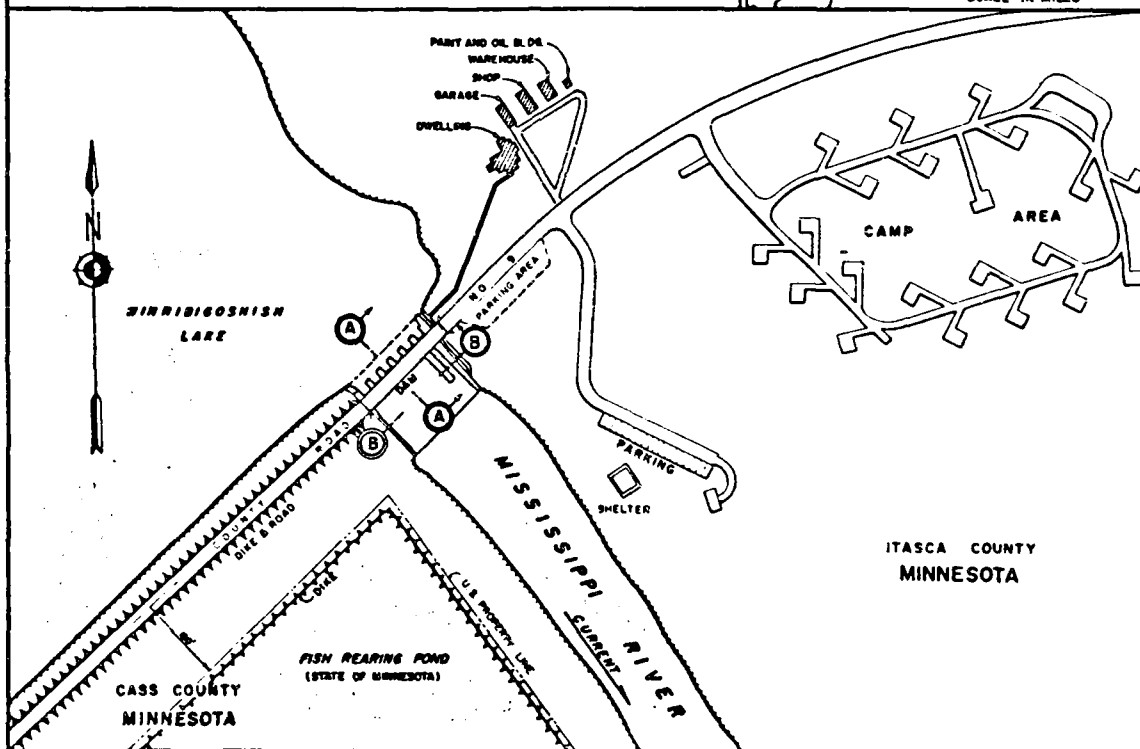
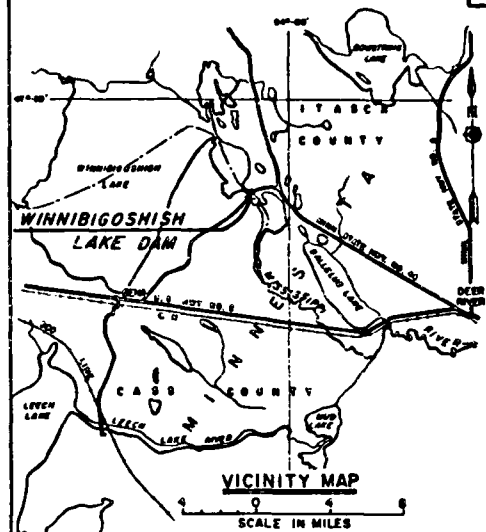
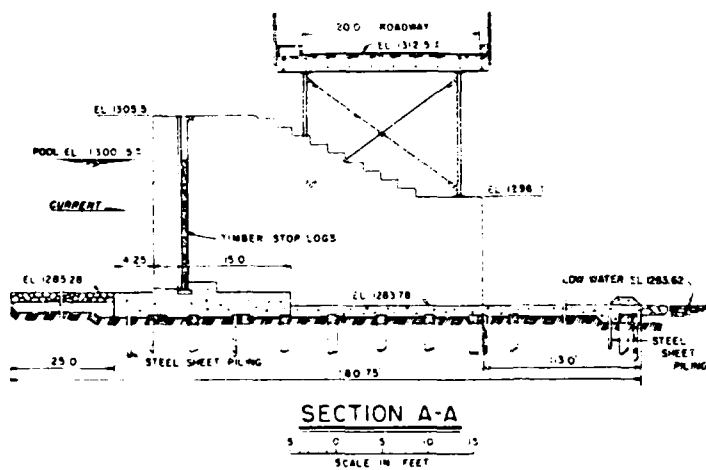
At the point where the highway on the north perimeter of Lake Winnibigoshish crosses the Third River (NW1/4 Sec 20 T147N R28W). Surface materials were found on the approaches to the bridge. Six test excavations were placed in the approaches. Two such units on the east side produced Blackduck sherds; four on the west side were sterile. All 6 test pits showed highly disturbed soil indicative of mixed fill. The bridge appears to cross a constructed outlet channel through a marshy zone in which fill from some unknown location was brought in to build up the bridge approaches. The Blackduck ceramics are associated with the fill and thus come from unknown disturbed location. Further inland on stable upland, backfill from a recent latrine excavation was examined and 1 very small chert flake was found. This is beyond and above the shoreline search area, however, and further examination of this locality was omitted. Because of the intrusive nature of the fill containing the sherds, this locality was not given a survey number and is not designated on the base map. The road and bridge do appear on the base map quad.

Winnibigoshish Dam Public Use Areas

The scope of work for this contract required an intensive archaeological examination of the two public use areas located below the dam and on the northeast side of the river. These investigations were carried out and the results were negative. (See map following for details of location.)

The two public use areas include a low-lying picnic area with an associated shelter and a parking area, and a public camping area on the upland above the picnic grounds. The picnic grounds are built on fill that was brought in from elsewhere, levelled, and then landscaped. The original surface was low, wet, and marshy as it is on the opposite bank of the river today. Future development in this fill area will not require further archaeological investigation.

The upland camping area failed to produce any cultural evidence other than very recent camping debris. Test pits and shovel tests at intervals around the camp ground road, in camp pad areas, and between the camping and picnic area were all negative. A hurricane force straight wind that uprooted a large number of older red pine in the camp grounds during the summer of 1976 provided additional negative evidence. No cultural evidence was seen in any of the disturbed earth at the base of the uprooted trees. This public use area is also cleared for any additional developments without an archaeological survey. Any construction that involves deep excavation should be watched during the construction process, however, as deeply buried sites may exist. If archaeological or paleontological evidence does appear under these circumstances, work should be halted and the St. Paul District, Environmental Branch, notified.



ELEVATIONS REFER TO CORPS OF ENGINEERS
RESERVOIR DATUM
DAGE ZERO = ELEV 1290.08

RIVER & HARBOR PROJECT
MISSISSIPPI RIVER
RESERVOIRS AT HEADWATERS
WINNIBIGOSHISH LAKE
DAM

SCALE AS SHOWN

CORPS OF ENGINEERS U S ARMY
OFFICE OF THE DISTRICT ENGINEER
ST PAUL DISTRICT ST PAUL, MINN
10 JUNE 1971

E. Conclusions

The Lake Winnibigoshish reservoir shoreline survey presented both distinct problems in reconnaissance survey and important results for pre-historic and historic archaeological research. The reconnaissance problems centered on a determination of the effects of raised water levels and subsequent water erosion or submersion of sites. Fortunately, the early maps of the lake area in the immediate pre-dam construction period gave us a base against which to plot present shorelines and from which to estimate site erosion. Many localities of finds where the materials came only from shallow water or wet beaches required an estimation of the former site location and its extent. Many of these estimations are subjective. Scattered localities of limited finds, particularly finds that were water-worn, suggested movement or transport of materials through water action from some previous location in place. We were unsuccessful in devising any objective criteria that would allow a reasonable estimate of the distance of movement.

Scheduling of the field survey during the summer months and thus the height of the vegetation growing season made the reconnaissance especially difficult. Upland vegetation in cut-over areas is always timbered by young growth, but there is an associated understory of shrubs that is frequently very dense and which prevents an adequate surface survey. It is strongly recommended that future reservoir surveys include a time schedule such that much of the field survey can be done in late spring after the ice is out and before the vegetation cover emerges, and time for late fall survey after killing frosts have reduced the vegetation cover.

A minor problem in the survey was the timing of the contract which left little pre-field time for a literature search. This was inconvenient more than inhibiting.

The very large number of sites on or formerly on Lake Winnibigoshish itself, and the very long time range these sites suggest, was surprising. Lake Winnibigoshish as a large, open body of water resembles most closely Lake Mille Lacs, and archaeological experience there indicates very few sites on Mille Lacs itself, rather the sites are located on outlet streams or adjacent smaller inland lakes. It was originally felt that a similar situation would exist at Lake Winnibigoshish, but the survey data prove this assumption to be incorrect.

Archaeological hypotheses concerning the significant increase in population during the Late prehistoric period seem to be partially confirmed if the number of sites from this period--as compared with earlier periods--is a measure of such population growth. The majority of Winnibigoshish sites belong to this late period. A correlate of the population growth hypothesis is that a causal factor in this growth is the beginning intensive use of wild rice as a food resource at the end of the Middle prehistoric period. Lake Winnibigoshish, lacking any extensive stands of wild rice, cannot provide specific data on this question. It can provide very important data, however, on the poorly understood subsistence activities of late

prehistoric peoples during other seasons of the year. The sites suggest one activity of importance could be spring fishing during the spawning season and perhaps spring and fall hunting of migratory waterfowl.

A most important conclusion is that the archaeology, primarily prehistoric, associated with the Lake Winnibigoshish reservoir is extremely significant and every effort must be made to preserve these data through either site protection or site mitigation.

That the erosion and submersion of sites has been severe is unquestionable. This impact at Lake Winnibigoshish is probably much more severe than at any of the other reservoirs in the headwaters system. The increased water levels here are considerably higher than at the other reservoirs, and when this is coupled with the sandy surrounding soils, the open basin form of the lake, and the tremendous wave action from the prevailing winds, the Winnibigoshish reservoir suffers the most bank erosion.

The erosional problem concerns more than archaeological sites, of course, as it destroys upland timbered areas, encroaches on structures and camp sites, and even threatens the Corps dam site itself. It is obviously impossible to control this erosion through riprap or other means of bank stabilization for the entire lakeshore, and thus archaeological sites will, in many cases, continue to suffer. It is for this reason that mitigation is recommended for many sites of obvious significance. Where the survey data are insufficient to determine significance (significance meaning more than the presence of a site), intensive site survey has been recommended. These data, together with a notation on degree of erosion, are summarized in the following table.

Fig. 6 Summary of Site Recommendations

Site No.	Location	Cultural Period	Physical Status	Recommendations
21-CA-17	NW $\frac{1}{4}$ Sec 2 T145N R29W	Early and Late prehis- toric	Submerged	None
21-CA-39	SE $\frac{1}{4}$ Sec 34 T146N R29W	Late prehistoric	Severe erosion	Further surface collecting to increase assemblage
21-CA-40	S $\frac{1}{2}$ Sec 21 T146N R27W	Indeterminate	Submerged	None
* 21-CA-59	SE $\frac{1}{4}$ Sec 26 T146N R27W	Early and Late prehis- toric	Severe erosion	Mitigation
21-IC-4	S $\frac{1}{2}$ Sec 26, N $\frac{1}{2}$ Sec 35 T147N R27W	Middle and Late prehistoric	Severe erosion	Mitigation
21-IC-18	S $\frac{1}{2}$ Sec 18 T146N R28W	Late prehistoric; Historic Chippewa	Eroded but stabilized	Intensive testing of historic component
21-IC-19	NW $\frac{1}{4}$ Sec 34 T147N R28W	Early prehistoric; Historic Chippewa	Severe erosion	Intensive testing
21-IC-21	NW $\frac{1}{4}$ Sec 3 T146N R27W	Indeterminate	Submerged	None
21-IC-22	S $\frac{1}{2}$ Sec 22 T147N R27W	Middle and Late pre- historic	Submerged	None
21-IC-23	North pen. SE $\frac{1}{4}$ Sec 26, South pen. NE $\frac{1}{4}$ Sec 35 T147N R27W	Early-Middle pre- historic	Moderate to severe erosion	Mitigation
21-IC-24	SE $\frac{1}{4}$ Sec 25 NE $\frac{1}{4}$ Sec 36 T147N R27W	Early to Late pre- historic	Slight erosion	Mitigation
21-IC-45	SE $\frac{1}{4}$ Sec 25 SW $\frac{1}{4}$ Sec 30 T147N R28W	Fur trade; Recent; Indeterminate pre- historic	Moderate erosion; pre- historic com- ponent sub- merged	Intensive testing to document fur trade component
21-IC-27	NE $\frac{1}{4}$ Sec 26 T146N R27W	Late prehistoric; Recent	Submerged	None
21-IC-28	SW $\frac{1}{4}$ Sec 14 T146N R29W	Late prehistoric	Eroded	None

Site No.	Location	Cultural Period	Physical Status	Recommendations
21-IC-32/ 33	SW $\frac{1}{4}$ Sec 35 T146N R29W	Late prehistoric	Severe erosion	Intensive testing
21-IC-34/ 35	SE $\frac{1}{4}$ Sec 34 T146N R29W	Late prehistoric	No erosion	Intensive testing
21-IC-36	SW $\frac{1}{4}$ Sec 19 T146N R28W	Early prehistoric?	Submerged	None
21-IC-37	NW $\frac{1}{4}$ Sec 35 T147N R27W	Early prehistoric?	Campground development	Intensive testing
21-IC-39	SW $\frac{1}{4}$ Sec 26 T147N R27W	Middle and Late prehistoric	No erosion	Intensive testing; preservation
21-IC-40	SW $\frac{1}{4}$ Sec 29 T147N R27W	Late prehistoric	Minor erosion	Intensive testing; preservation
21-IC-41	NE $\frac{1}{4}$ Sec 27 T147N R27W	Fur trade; Recent	No erosion	Intensive testing; preservation
21-IC-42	NE $\frac{1}{4}$ Sec 36 T147N R27W	Late prehistoric	Eroded	None
21-IC-43	W $\frac{1}{2}$ Sec 32 T147N R28W	Indeterminate	Submerged	None
21-IC-44	NE $\frac{1}{4}$ Sec 19 T147N R28W	Middle prehistoric	Moderate erosion	Intensive testing
WS-2	SE $\frac{1}{4}$ Sec 26 T146N R27W	Prehistoric?		Needs testing

The tabular summary above recommends mitigation or intensive testing on eleven of the sites surveyed. These recommendations are based both upon the estimated significance of the sites in question and the degree of using the criteria established for nomination to the National Register of Historic Places. Two of the eleven sites (The Winni Dam Site and Williams Narrows) have data sufficient at this time to prepare National Register nomination forms. Mitigation is recommended for these two sites because of severe erosion problems. The remaining nine sites need intensive testing to determine eligibility for the National Register and thus determine the need for mitigation. These sites are all potentially eligible.

On the 24 sites listed in the above table, twelve were identified for the first time on this survey. The remaining twelve had been recorded as present, largely through utilization of the personal survey data of E. F. Creech, but none had been subjected to a formal field survey before. How many of the localities listed under the WS rubric were actually sites before

the water levels were raised and severe erosion began is conjectural, but it is certainly probable that some were sites and the evidence remaining is so minimal that this conjecture cannot be verified.

Given the rapid rate of continuing erosion at many of the remaining sites, it is hoped that the suggested intensive testing and mitigation can be undertaken very quickly. If this is not done, most of those sites will be destroyed and valuable cultural resources eliminated with only minimal records.

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ship to Laurel and Blackduck ceramics." Paper read at the 1976
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- 1976 "The Archaeology of the Smith Site: A study of the ceramics and
culture history of Minnesota Laurel and Blackduck." Ph.D. disserta-
tion, University of Wisconsin.
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- 1975 "A Study of 21 CA 58: an analysis of a multi-component Middle Woodland site on the shores of prehistoric Lake Gayashi." M.A. thesis, University of Minnesota.

Shay, C. T.

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- 1974 "The preceramic archaeology of northern Minnesota." in E. Johnson, ed., Aspects of Upper Great Lakes Archaeology, Minnesota Prehistoric Archaeology Series, No. 11:64-73.

Steinbring, Jack and J. P. Whelan

- 1971 "Test Excavations at the Fish Lake Dam Site." Minnesota Archaeologist, 31:3-40.

Stoltman, James B.

- 1971 "Prismatic Blades of Northern Minnesota." Plains Anthropologist, 16:52:105-110.

- 1973 "The Laurel Culture in Minnesota." Minnesota Prehistoric Archaeology Series, No. 8.

Wilford, Lloyd A.

- 1941 "A Tentative Classification of the Prehistoric Cultures of Minnesota." American Antiquity, 6:231-239.

- 1955 "A Revised Classification of the Prehistoric Cultures of Minnesota." American Antiquity, 21:130-142.

Wright, H. E., Jr.

- 1972 "Quaternary History of Minnesota." in P. K. Sims and G. B. Morey, eds. Geology of Minnesota. pp. 515-548.

- 1976 "Pleistocene Ecology, some current problems." Geoscience and Man, 13:1-12.

APPENDIX A.

Resumés

VITA

Inger Christina Götesdotter Harrison (Haglund)

410 Winona Street

Northfield, Minnesota 55057

(507) 645-4246

Personal:

Born: Stockholm, Sweden, 2.27.1939

Education:

- a. Ludvika Högre Allmänna Läroverk, Ludvika, Sweden, 1952-58
- b. University of Upsala, Sweden, 1958-61
- c. University of London, Institute of Archaeology, London, England;
Internal Student 1963-65; Research and Completion of Thesis for
M. Phil. 1966-68.

Qualifications:

- a. Phil.Cand. University of Upsala, December 1961.

Majors: German Language and Literature (Honors)

History and Theory of Art - General European, Classical, N.Eastern

Minors: North European Prehistory (Honors)

Social and Cultural Anthropology, (Honors)

- b. M.Phil. University of London, Institute of Archaeology, June 1969

1963-65: Internal M.Phil. Candidate. Completed courses in:

European, Asian and African Prehistory, Professors J.D.Evans, R.
Hodson, J.Sheldon, T.S.Suliminski, F.Zeuner.

Physical Anthropology, Paleontology, Professor I.Cornwall.

Environmental Archaeology and Pleistocene Geology,
Professors F.Zeuner and I.Cornwall.

Archaeological Techniques (Field and Conservation),
Professors H.Hodges and I.Gedye.

Prehistoric Technology, Professor H.Hodges.

Archaeological Draughtsmanship,

Cultural and Social Anthropology, Professor P. Ucko

1966-68: Research for thesis in London, Sweden, Finland and the USSR.

This research involved a study of the archaeological evidence for culture contact between and within Scandinavia, Russia (including both European and Asian parts) and the British Isles during the Late Neolithic, Bronze Age and Iron Age periods. Particular emphasis was placed on the analysis of trace impurities.

in metal ores and metal artifacts, and on the matching of such trace impurity profiles of ores and finished artifacts in order to reconstruct prehistoric patterns of ore extraction, metallurgy and trade. Stylistic analysis of metal objects and of other contemporary artifacts, such as ground stone axes and ornaments, wood carvings and amber ornaments and sculptures, was also employed in order to trace probable contact patterns. The possible nature of such contacts was considered. Another aspect of this research dealt with the often marked differences in approach and interpretation between western archaeologists and their marxist colleagues in Eastern Europe, and particularly with the possible professional bias that could follow from differing national interests and ideological frameworks.

The work was carried out in two stages:

- extensive library research in British, Scandinavian, Finnish, German, Dutch, Lithuanian, Latvian, Estonian, Polish and Russian archaeological literature;
- study of museum collections in Scandinavia and in the USSR. This aspect of the research was funded, in part, by a University of London Central Research Fund Travel Grant.

The thesis, titled: Connections between Scandinavia, Russia and the British Isles from the Late Neolithic to the Early Iron Age, (200 pp. text, 97 figures, plates and maps) was submitted and approved during December 1968, formally defended and accepted in May 1969.

Scholarships and Grants:

- a. Norstedt's Literary Prize (Sweden), 1958 (for essay on Scandinavian poetry of 1939-45).
- b. British Council Overseas Scholarship, 1964-65.
- c. University of London Central Research Fund Travel Grant for research carried out in the USSR 1967.

Publications:

Translation of The Art of Mesopotamia from the German Mesopotamien, by Eva Strommenger, for Thames and Hudson, London, (300 pp.)

Languages:

Swedish - native speaker.
German - fluent reading, writing, speaking.
Russian and French - reading and reasonable speaking knowledge.
Norwegian, Danish, Dutch - reading knowledge.

Teaching Positions Held:

1970-71, Instructor, Department of Sociology and Anthropology, Carleton College
Northfield, Minnesota. Courses given:

1. Soc.10 Introductory Anthropology (Physical Anthropology, Archaeology, Cultural Anthropology). (Given twice).
2. Soc.28 Origin of Man and Culture (Old and New World Prehistory, Archaeological Method and Theory).
3. Supervision of various Independent Studies.

1971-73, Visiting Assistant Professor, Department of Anthropology, University of Minnesota, Minneapolis. Courses given:

1. 5-531 Paleoanthropology (three times).
2. 5-532 Old World Prehistory (twice).
3. 5-171 Method and Theory in American Archaeology.
4. 5-376 Field Methods in Archaeology.
5. 8-501 Graduate Seminar in Arctic Archaeology.
6. 3-970 Directed Studies.

1973, June 11-August 3, Directed the Archaeological Summer Institute at Carleton College, Northfield; (5 weeks of fieldschool, 3 weeks of laboratory analysis and interpretation of excavated material and site features).

1974, June 10-August 2: Directed another session of the same Archaeological Summer Institute.

1974-76, Instructor (part-time), Department of Sociology and Anthropology, St. Olaf College, Northfield, Minnesota. Courses given:

1. Soc.37 The Emergence of Man (Physical Anthropology, World Prehistory, Archaeological Methods). (Given twice).
2. Soc.38 Cultural Anthropology (twice).
3. Soc.IIa Native Americans Yesterday and Today.
4. Supervision of various Independent Research projects.

1975, Jan.-June, Instructor, Department of Sociology, North Hennepin Community College, Minneapolis, Minnesota. Courses given:

1. Anth 102 Introduction to Cultural Anthropology (Winter '75)
2. Anth 101 Introduction to Anthropology (three sections, Spring '75)

1976, → Assistant Professor, Anthropology, Extension Division, University of Minnesota, Minneapolis, Minnesota. Courses given:

- Anth 5511 North American Archaeology (Spring semester 1976)
Anth 1101 Introduction to Prehistory (Fall semester 1976)
Anth 3502 Principles of Social and Cultural Anthropology (CEW, Fall 1976)
Anth 5531 Old World Prehistory (Spring semester 1977)

Archaeological Research:

Participated in excavations at the Neolithic and Bronze Age site at Gwirthian, Cornwall, England during the summers of 1960 and 1961. Director: Professor Charles A. Thomas, University of Edinburgh.

Participated in excavations at the Bronze Age Cemetery of Dragby, Upsala, in Sweden, during May-June 1961. Director: Professor Marten Stenberger, University of Upsala, Sweden.

Worked as Assistant Field Director for Riksantikvarieambetet (The Ministry of Antiquities), Sweden in the excavations at Overuman, Swedish Lapland, a seasonal hunting camp of the Circumpolar Stone Age, during July-September 1962, and again during July-August 1963.

Museum and library research during 1966-67 in London, Sweden, Finland and the USSR (c.f. pp.1-2).

Participated as an assistant in the excavation of an aboriginal burial mound at Broadbeach, south of Brisbane, Queensland, Australia during August and September 1968. Director: Dr. L. Galley, University of Queensland.

Directed the University of Minnesota Archaeological Fieldschool at Rice Lake State Park, Minnesota, June 18-July 25, 1972.

Submitted a proposal for an Archaeological Summer Institute at Carleton College, Northfield, Minnesota during Fall 1972. Directed the first two sessions of this program during June and July of 1973 and 1974, which involved excavation in Rice and Goodhue counties followed by analysis of excavated material.

Participated in an archaeological survey along the transcontinental pipeline, western New South Wales, Australia during March, 1974.

Worked on the analysis of archaeological material excavated from the Silvernale site (21-GD-3), Goodhue county, Minnesota, during the previous summer. This was, in part, carried out with the assistance of students at Carleton College and St. Olaf College, Northfield, Minn.

During April-July 1976, directed another season of excavation at the Silvernale site, this time in cooperation with members of the Council for Minnesota Archaeology and the Minnesota Archaeological Society.

July-September, 1976: participated as field director in an archaeological shoreline survey of Lake Winnibigoshish, Minnesota; principal investigator was Professor Elden Johnson, University of Minnesota.

October-November 1976, carried out an archaeological survey for the Chippewa National Forest, Itasca County, Minnesota.

Abbreviated Resume

Elden Johnson
Professor of Anthropology
University of Minnesota

Business address:

Department of Anthropology
215 Ford Hall
University of Minnesota
Minneapolis, Minnesota 55455

Home Address:

3620 Coolidge Street Northeast
Minneapolis, Minnesota 55418
Telephone: (612) 789-4966

Telephone: (612) 376-7621

Born: Brookings, South Dakota, 22 October 1923. U.S. citizen

Education:

University of New Mexico 1940-41
University of Minnesota 1945-50
Yale University 1950-53

Professional employment:

1953-55 Curator of Anthropology, Science Museum of Minnesota
1955-75 University of Minnesota, Department of Anthropology
1958-59 Director, Science Museum of Minnesota

Field research:

1949 Standing Rock Reservation, North Dakota, ethnological research
1952-53 Thailand, ethnological research
1953-56 Archaeological research, Spring Lake, Minnesota
1959-75 Annual archaeological research, Minnesota, North Dakota
1967 Paleolithic site survey, West Pakistan

Professional associations:

Fellow, American Anthropological Association
Society for American Archaeology
American Association for the Advancement of Science
Sigma Xi

BIBLIOGRAPHY OF PUBLICATIONS

Elden Johnson

- 1954 Review: Walam Olum or Red Score: The Migration Legend of the Lenni Lenape or Delaware Indians, Indiana Historical Society. Minnesota History, Vol. 34, No. 4.
- 1955 "Carl Bodmer Paints the Indian Frontier." Indian Leaflets, No's. 8, 9, 10. The Science Museum, St. Paul.
- "A Human Effigy Pipe from North Dakota." Plains Anthropologist.
- "Indian Houses." Gopher Historian, Vol. 10, No. 5.
- Review: The Micmac Indians of Eastern Canada by Wilson D. and Ruth Wallis. Minnesota History, Vol. 34, No. 6.
- 1956 "Spring Lake Archaeology: The Lee Mill Cave," (with Philip S. Taylor). Science Bulletin, No. 3, Pt. 2. Science Museum, St. Paul.
- Review: The Atlatl in North America by James H. Kellar. American Antiquity, Vol. 22, No. 1.
- 1957 "The Minnesota Archaeological Site File." Vol. 21, No. 2. pp.
- "Indians before History in the Upper Mississippi Valley," (and Louis H. Powell)... Guide Pamphlet, No. 3. Science Museum, St. Paul.
- "Hopewell Burial Mounds in St. Paul." Park Leaflets, No. 3. Science Museum, St. Paul.
- 1958 Annual Report of the Director. Science Museum, St. Paul.
- "Spring Lake Archaeology: The Sorg Site." Science Bulletin, No. 3, Pt. 3. Science Museum, St. Paul.
- 1959 "An Archaic Horizon Cache from Southern Minnesota." Proceedings, Vol. 27. Minnesota Academy of Science.
- Review: Araucanian Child Life and Its Cultural Background. Smithsonian Miscellaneous Collections, Vol. 133. By Sister M. Inez Hilger. 1957. American Anthropologist, Vol. 61, No. 3. p. 530.
- 1960 "Cambria Burial Mounds in Big Stone County." Minnesota Archaeologist, Vol. 23, No. 3. 53-61.

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- "A Statistical Analysis of Some Mississippian Projectile Points," (with Craig Henrikson). Proceedings, Vol. 28. Minnesota Academy of Science. pp.
- Atlas for Anthropology, (with Robert F. Spencer). W. C. Brown, Dubuque.
- Review: Hidden America by Roland Wells Robbins. Minnesota History, Vol. 37, No. 1, 30-31.
- Review: Indian Life in the Upper Great Lakes, 11,000 B.C. to A.D. 1800. By George I. Quimby. 1960. Minnesota History, Vol. , No. . p. 174.
- 1961 Review: Indian Life in the Upper Great Lakes, 11,000 B.C. to A.D. 1800 by George I. Quimby. American Antiquity, Vol 27, No. 2. pp. 250.
- 1962 "An Archaic Horizon Cache from Southern Minnesota." Minnesota Archaeologist, Vol. 14, No. 4. pp. (Reprint of same article in 1959 Proceedings, Minnesota Academy of Science;)
- "Notes on the Mdewakanton Bark House." Minnesota Archaeologist, Vol. 14, No. 2. pp.
- Manual for Introductory Anthropology, (with Evelyn Hatcher). Minneapolis.
- 1963 "The Prehistory of the Red River Valley." Minnesota History, Vol. 33, No. 4. pp.
- "The Prehistory of the Red River Valley." Minnesota Archaeologist, Vol. 25, No. 4. pp. (Reprint of 1963 article in Minnesota History.)
- 1964 Annual Report of the State Archaeologist. Minneapolis. Mimeo.
- "Copper Artifacts and Glacial Lake Agassiz Beaches." Minnesota Archaeologist, Vol. 26, No. 1. pp. 4-21.
- "Twenty New Radiocarbon Dates from Minnesota." Minnesota Archaeologist, Vol. 26, No. 2. pp.
- "Sandy Lake Ware and its Distribution," (with Leland R. Cooper). American Antiquity, Vol. 29, No. 4. pp.
- "Introduction," in J. D. Holmquist and A. H. Hillman, eds. Diving into the Past. St. Paul.
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- 1965 "Tribes of the Northeast." In R. F. Spencer and J. D. Jennings, eds., The Native Americans, New York, 19 . pp. 334-401.
- "Tribes of the Great Plains." In R. F. Spencer and J. D. Jennings, eds. The Native Americans, New York, 19 . pp. 337-384.
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- 1966 "An Archaeology Program for Minnesota." Minnesota Outdoor Recreation and Resources Commission Report No. 5. St. Paul.
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- "Decorative Motifs on Great Oasis Pottery." Plains Anthropologist. Vol. 14, No. 46, pp. 272-276.
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- "The Prehistoric Peoples of Minnesota." Minnesota Prehistoric Archaeology Series, No. 4. Minnesota Historical Society, St. Paul.

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- "Prehistoric Archaeology and Public Interpretation." Minnesota History, Vol. 42, No. 4. pp. 153-154.
 - "Introduction." In Lloyd A. Wilford, "Burial Mounds of the Red River Headwaters." Minnesota Prehistoric Archaeology Series, No. 5. Minnesota Historical Society, St. Paul.
 - "Prehistoric Archaeology and Public Interpretation: A New Approach." Minnesota History, Vol. 42, No. 3, 153-154. Reprinted in: Historic Preservation in Minnesota, by Donn Coddington. Minnesota Historical Society, 1971.
- 1971 Annual Report of the State Archaeologist. Minneapolis. Mimeo.
- Review: The First American: A Story of North American Archaeology by C. W. Ceram. 1971. Minnesota History, Vol. No. . p. 310.
 - "The Northern Margin of the Prairie Peninsula." In Richard B. Johnston, ed., The Prairie Peninsula and its Relationships to the Middle Missouri. Journal of the Iowa Archaeological Society, Vol. 18, pp. 13-21.
 - "Excavations at the Gull Lake Dam." Minnesota Archaeologist, Vol. 31, No. 2, pp. 44-69.
 - "Recommendations of the State Archaeologist." In Donn Coddington, Historic Preservation in Minnesota. Minnesota Historical Society.
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- 1974 Upper Great Lakes Anthropology: Essays in Honor of Lloyd A. Wilford. Minnesota Prehistoric Archaeology Series, No. 11. Minnesota Historical Society, St. Paul.
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- 1976 "Archaeology and Native Americans" in Charles R. McGinsey III, ed., Guidelines for the Profession, Society for American Archaeology, Special Publication.
- 1977 "Tribes of the Northeast" and Tribes of the Great Plains," in R.F. Spencer and J.D. Jennings, eds., The Native Americans, rev. ed., Harper and Row, New York
- "Notes on Runestone excavations," Minnesota History, 45:5:196. St. Paul.

Resume

Schaaf, Jeanne M.

Research Assistant
Department of Anthropology
215 Ford Hall
University of Minnesota
Minneapolis, Minnesota 55455

Birth Date: 23 April 1953

Education: B. A. Degree, June 1975, Anthropology (with specialization in Archaeology), University of Minnesota, Minneapolis, Minnesota

M. A. (and Ph.D) candidate (1976-present), Anthropology (with specialization in Archaeology and Paleoecology), University of Minnesota, Minneapolis, Minnesota.

Work experience:

- 1973-75 Archaeology Laboratory Technician, University of Minnesota
(Supervisor: Jan E. Streiff)
- 1974 Archaeology Field School (Wilford Site, 21-MC-12) University
of Minnesota. Crew Member. (Director: Elden Johnson)
- 1974 Survey, North-Central Minnesota, Mille Lacs Co., University of
Minnesota. Crew Member. (Field Director: Janet Spector)
- 1975 Assistant Archaeologist, Environmental Resources Branch, U. S.
Corps of Engineers, St. Paul. (Supervisor: Jane E. Streiff)
- 1975 Consultant Archaeologist, Science Museum of Minnesota.
- 1977 Lower Snake River survey, for Minnesota Department of Natural
Resources. (with Jan E. Streiff)
- 1977 Archaeology Field School, Granite Falls, Mn. Science Museum
of Minnesota and SWU. T. A. (Field Director: G. Joseph Hudak)

Publications (pending):

Techniques for the Recovery and Identification of Paleobotanical
Macrofossils from Archaeological Sites.

Fossil Seed Analysis of the Cooper Site (21-ML-9) and the L.A. Wilford
Site (21-ML-12) in North Central Minnesota (joint research project
with Robert C. Bright, Curator of Paleontology, Bell Museum of
Natural History, University of Minnesota).

Reports: Cultural Resource Literature Search, Duluth, Mn. for U.S. Corps of
Engineers, December, 1975.

Cultural Resource Literature Search, Marshall, Mn. for U.S. Corps of
Engineers, December 1975.

Bassett Creek Survey Report for U. S. Corps of Engineers, November, 1975

Schaaf (Continued)

References:

Elden Johnson
Department of Anthropology
215 Ford Hall
University of Minnesota
Minneapolis, Minnesota 55455

Janet Spector
Department of Anthropology
215 Ford Hall
University of Minnesota
Minneapolis, Minnesota 55455

Jan E. Streiff
Box 288
Markville, Minnesota

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